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ABSTRACT

The purpose of this exploratory study was to measure the impact of a specific style of parent education on parental behavior with their children. Six families, chosen by invitation from among parents participating in the Carbon County, Utah parent education program, participated in the study. A BAB-ABBA single case experimental design was performed six times. (In this design the B sub-phases represent the treatment program and the A sub-phases represent a withdrawal or no treatment phase.) Three behaviors, or dependent variables, were measured in the participants' homes to ascertain change in parental behavior. Two of the dependent variables measured were parental supportive and instructive behaviors. These were defined and measured by asking the parents to assist their child succeed in a given task. The other dependent variable, the pattern of interaction with family members, was defined as horizontal or vertical interaction and was measured by coding weekly tape recordings of family dinner times. (Vertical was taken to mean behavior which is generally negative or unproductive, and horizontal was taken to mean behavior which is positive relationship building.) Missing baseline data and insufficient data points in each sub-phase of the BAB-ABBA eliminated the possibility of testing the study hypotheses and of drawing conclusions in regard to the parent education program as the determinant variable affecting parental behavior. However, a number of interesting trends in parental behavior emerged, showing strong initial involvement, cumulative effects, temporary effects, and a difference in response for each gender role. The study's limitations are discussed and recommendations for further research are suggested. (MP)

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THE EFFECT OF A PARENT EDUCATION PROGRAM ON
SELECTED ASPECTS OF PARENTAL BEHAVIOR:
AN EXPLORATORY STUDY

A Thesis
Presented to the
Department of Child Development and Family Relationships
Brigham Young University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by

Daniel David Shade

April 1981

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AN EXPLORATORY STUDY

Daniel David Shade

Department of Child Development and Family Relationships

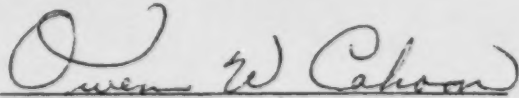
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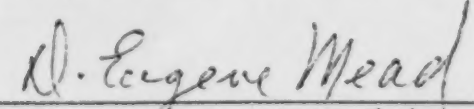
ABSTRACT

The purpose of this study was to measure the impact of a specific style of parent education program on parental behavior with their children. A single case design was performed six times. Specifically a BAB-ABBA design was implemented. The subjects were six families involved in a short-term parent education program. Each family was measured for change in supportive, instructive, and interaction patterns. Missing baseline data and insufficient data points in each subphase eliminated the possibility of testing hypotheses. However, a number of interesting trends in parental behavior emerged, showing strong initial involvement, cumulative effects, temporary effects, and a difference in response for each gender role. Hypothetical explanations based on evidence and observation are offered.

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This thesis, by Daniel D. Shade, is accepted in its present form by the Department of Child Development and Family Relationships of Brigham Young University as satisfying the thesis requirement for the degree of Master of Science.

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CHAPTER 1

INTRODUCTION AND REVIEW OF THE LITERATURE

There is a wealth of research literature today identifying parents as the most effective teachers of their own children (Biber, 1970; Bronfenbrenner, 1975; Gordon, 1970, 1972, 1973, 1975; Heincki, 1976; Schaefer, 1970). Many treatment programs (Turpin, 1975, p. 18) emphasize parents as "the most competent persons available to assist the child in achieving his developmental potentialities within the home, school, and community." Bronfenbrenner (1975) explains that a child learns best from someone he is attached to and ordinarily the strongest attachments involve a child's parents, thus placing them in an ideal position to affect the lives of their children. Programs which involve parents often show significant benefits for the children involved.

Schaefer (1972), in an extensive review of a variety of parent intervention programs, reports the following benefits for children:

(a) significant IQ gains lasting three years or more (with gains of as much as 17 to 30 points, depending on the type of program); (b) similarly significant advances in language development; (c) significant differences in eye-hand, personal-social, and hearing-speech skills. In addition to the benefits received by the target child, there is also vertical diffusion of benefits to younger children in the family and horizontal diffusion of benefits to children throughout

the neighborhood. These findings show that when parents are involved, the gains for children are significant. But what is really happening to the parent? What benefits does the parent derive from involvement in parent education, and how do these benefits to parents affect the child?

The Home as the Center of Intervention

Brim (1975, p. 54) has defined parent education as "an activity which uses educational techniques to influence parental role performance." The assumption follows, then, that parent education ought to improve parent-child interactions, and any improvement should show up in positive benefits for the child such as those previously listed. For the most part, this has been shown to be true (Bronfenbrenner, 1975; Schaefer, 1972). However, Bronfenbrenner (1975) warns that in spite of the immediate gains for children resulting from parent education, such gains tend to diminish as soon as the intervention stops. This does not mean that such programs are not contributing to the child's development, only that they do not have a lasting impact on the child's home environment and those to whom he is attached. Bronfenbrenner calls this the child's "enduring" environment. He further explains that it is this relationship between parent and child that makes the home environment an enduring one. There are two reasons for this: first of all, as mentioned above, the agent of change is mother or father, and there is usually a strong attachment bond between parent and child. Secondly, the influence of the parent is not terminated when the intervention

program ends. It will continue as long as there is joint activity and interaction between parent and child. In other words, the environment endures; so does the influence.

Bronfenbrenner (1975) puts it this way:

When reciprocal interaction takes place in an interpersonal relationship that endures over time, it leads to a development of a strong emotional attachment which, in turn, increases the motivation of the young child to attend to and learn from mother (p. 555).

If Bronfenbrenner's assumption is correct, then parents are in a unique position to effect change in the lives of their children. It is necessary to look briefly at parental behavior change and benefits resulting from parent education, to clearly understand how such a relationship exists.

Benefits for Parents Result in Benefits for Children

There is in the literature, though scant, evidence of many positive benefits for parents which result from their involvement in parent education. Some examples of these include intellectual gains, teaching skill acquisition, attitude changes, and changes in parent perception of self (Meier, 1976). The basic assumption held by many professionals in the field of child development (Bronfenbrenner, 1975; Davis, 1974; Schaefer, 1972) is that parental benefits such as these help promote the significant IQ gains and enhanced language development in children. However, as noted above, the positive gains for children are often short-lived. Bronfenbrenner (1975) has noted that even after an initial increase in some target behavior (usually IQ) children often show a progressive decline even

while parent education programs are still in operation. He is referring specifically to group programs in which the intervention is aimed at the child. In such programs, even though parents meet together to be taught parenting skills and principles, they are seen as secondary to the teachers and professionals. This form of parent education is probably the most common method used today. Bronfenbrenner (1975) further notes that a change of emphasis resulting in intervention aimed directly at the parent and centered in the home can help to maintain positive child gains such as improved IQ score. Examples of such programs were run by Levenstein (1970) and Karnes (1968, 1970).

Levenstein's program utilized a home visitor who stimulated interaction between mother and child by training mother to effectively use toys and books to help her child develop cognitively. The evidence of 17 point IQ gains for the experimental children compared to slight or zero gains for control children implies that the mothers learned the principles and skills that were taught. Further evidence to support this emerged when it was discovered that the IQ gains could be maintained over the years to come primarily through the mother's efforts; ultimately then the toy demonstrators were no longer needed. Karnes had mothers attend group meetings where they were taught similar skills. In sum, both programs focused on mother as the agent of intervention, and the result was significant lasting IQ gains for the children several years beyond the termination of the program.

Bronfenbrenner (1975) adds further that one reason group parent education programs are often unsuccessful after intervention terminates is because they leave no permanent social structure with familiar figures for the child. In other words, there is no one to continue the interactions that reinforce, through attachment and dependency, what the child has learned. This is the same criticism that Davis (1974, p. 3) made in his evaluation of the limited success of many preschool intervention programs. He suggested that "changes are being effected in the children that were not supported or reinforced in their home environments." In conclusion, the parent is a crucial factor in whether preschool programs have long-lasting effects for the child or not because when the intervention program is terminated the parent is still there. The child has someone to whom he is attached and so the intervention continues.

The Problem

If we assume, then, that parent education serves as a springboard in helping parents gain the knowledge and skills necessary to influence their child's development, then it becomes necessary to study parental behavior in the home to ascertain exactly what is happening to parental behaviors as a consequence of parent intervention. Ross (1972) comments on this task, noting that if behavior is to be studied or modified, then the study of such behavior must take place when and where the behavior changes manifest themselves. It has further been suggested (Allport, 1962; Endres, 1968) that

such an approach ought to yield the most valid data, making possible a fuller, more accurate assessment of parent education.

This study attempted to intervene in the relationship between the parent and child in an attempt to enhance the quality of that relationship. Since Bronfenbrenner (1975) and others have shown that a quality parent-child relationship is a major factor in a child's development, then any measurement of parental behavior changes ought to follow the suggestion of Ross and take place in the parent's home. Therefore, the major question asked in this study was this: what kind of effect does the learning of selected concepts in child development through a parent education program have on parental behavior?

Parent education in this context refers to once a month lectures given to the parents by their child's kindergarten teacher, where communication skills and keys to helping children were offered. These lectures were supplemented by tapes, readings, and weekly parent-child activities in the home.

Specific parental behaviors were therefore identified and measured to assess the impact of the parent education program on parental behavior in the home. The measures utilized were chosen in the light of two extensive reviews concerning adult behaviors that foster learning in children (Barker, 1976; Hess, 1972). Both of these reviews concluded that a warm accepting atmosphere and specific instruction create the most productive learning experience for children. For the purposes of this study, parental supportive behavior, instructive behavior, and pattern of interaction

(communication) were chosen as the indicators of these two fundamental conditions. Supportive and instructive behaviors were operationally defined by Larsen (1972) and measured by asking parents to assist their child in a given task. These behaviors have been broken down into supportive facial, supportive verbal, physical proximity and physical contact for the supportive behaviors; and verbal instructive and physical demonstrative for the instructive behavior. Interaction patterns, as used in this study, are described by how vertical or horizontal the interaction is (Allred, 1976). By vertical we mean behavior which is generally negative or unproductive of interpersonal growth and supportiveness. A parent interacting vertically would be one whose communication is seeking attention, bossing, punishing, and creating or maintaining distance. By horizontal we mean messages which are positive relationship building, such as the parent voicing observations, seeking to understand, discussing alternatives, giving support, and disclosing feelings to another family member. These particular areas of behavior were also chosen because well-developed measurement tools of high validity already exist. These variables are operationalized in Chapter 2.

The purpose of this study, then, was to measure the impact of a specific style of parent education program on the parents' behavior with their child. In order to do this, several specific questions were asked. First, can a parent education program effect change by increasing parental supportive and instructive behaviors? In other words, can parents learn to be more nurturing and emotionally supportive of their children, and can they learn to be better

teachers of their children? Secondly, can a parent education program effect change in the pattern of family interaction? That is, can a parent learn to communicate more positively?

As noted earlier, parents receive varied benefits from involvement in parent education. These benefits include positive gains in knowledge, acquisition of parenting skills, and teaching skills. Positive changes in attitude and parent self-perception are evidenced as well. It will be shown that parent intervention results in positive changes in parental supportive behavior, instructive behavior, and in the pattern of family interaction.

Parental Supportive Behaviors

As introduced above, supportive behaviors are those behaviors exhibited by parents as they seek to help their child succeed at a given task. Such behaviors include verbal statements of praise and affection, facial expressions such as smiles and winks, physical contact, and the maintenance of physical proximity. Not all of the behaviors defined by Larsen (1972, 1975) as supportive behaviors have been empirically verified. However, Hess (1978, p. 5) reports that often the "verbal behavior of parents tended to include more support of the child's efforts."

Larsen (1972) found that she could successfully train teachers to use supportive behavior as they worked with children on a cognitive or motor skill. She also noted that teachers in the experimental group differed significantly from the control group in the frequency

of simultaneous supportive behavior. Larsen defined this as three or more supportive behaviors occurring at the same time.

From training teachers in supportive skills, others have gone on in an effort to teach the same skills to parents (Barker, 1976; Hyde, 1976). Both of these individuals were able to find positive evidence for increased parental supportive behaviors as a result of parent education. Barker's (1976) results were similar to Larsen's (1972) with additional evidence for verbal supportive behavior. Similarly, Hyde (1976) found results for the verbal and physical contact aspects of supportive behavior. However, he was also able to find evidence of change in the supportive areas of maintaining proximity and statements of approval, thus showing that parents can indeed learn to increase some of their supportive behaviors.

Parental Instructive Behaviors

There are also a number of studies which lend support to the idea that parent education results in an increase in teaching skills for the parent (Barker, 1976; Gilmer, 1970; Gordon, 1972, 1973; Hyde, 1976, Karnes, 1968; Larsen, 1972; Myers, 1977). Instructive behaviors were also introduced previously as behaviors used by parents when helping their child to succeed at a given task. Such behaviors would include any verbal instructions and physical demonstrations. Unlike the previous review on supportive behaviors, all of the behaviors operationalized as instructive have been empirically verified.

Larsen (1972) found a significant increase in demonstrative behavior for teachers working with both the cognitive and motor task.

Barker (1976) also found evidence of significant increases in demonstrative behavior. Hyde (1976), however, found that parents participating in parent education not only improved in demonstrating and showing materials, but they improved in verbal instructive behaviors as well. Hyde found that the participating parents improved in such verbal behaviors as clarifying, questioning, and informing. In all of these studies (Larsen, Barker, Hyde) parents in the experimental group were specifically taught instructive skills while control group parents were not. There is evidence, then, that changing parental behavior along the dimension of instructiveness is possible.

Parental Patterns of Interaction

The literature also provides some evidence of positive changes in the pattern of family interaction as a result of parent education. That is, parents can learn to communicate and interact more positively.

Although family interaction patterns have been used as a measure in the field of Marriage and Family Therapy (Allred, 1976), this is the first time the Allred Interaction Analysis has been used as a measure of vertical and horizontal interaction in a parent education setting. Because of this, the literature does not specifically indicate increased horizontal (positive) interaction to be one of the benefits of parent education. Nevertheless, there is ample evidence for the Allred Interaction Analysis' ability to "map" the style of ongoing dyadic relationships, be that husband-wife,

parent-child, or sibling-sibling (Allred, 1976; Allred & Kersey, 1977). The Allred Interaction Analysis has also been effective in training female dyads living in a dorm to increase in expressions of self-concepts, ability to be good listeners, ability to express thoughts clearly, ability to cope with emotions, and a willingness to disclose feelings freely (Allred & Graff, 1979, 1980). In other words the Allred Interaction Analysis has been shown to be successful in mapping changes that occur in the pattern of ongoing relationships.

Similar types of pattern change are evidenced in the literature. For example, in Goodson's (1975) review of parent programs, she reports parents receiving parent education to be more responsive, warmer, more sensitive, and more relaxed with their children after the program. She also reports that these changes could be found during the intervention and not just at its conclusion.

This corresponds to Endres' (1968) evaluation of program parents as those who listen more, think about reasons for punishment, control their tempers more, encourage more, and show more affection. All of these behavior changes are considered to be aspects of horizontal communication (see Chapter 2 for more details).

Summary of Role Performance Changes

In summary, parent education has been shown to positively affect parents in many ways. The positive effects include changes in supportive behaviors, instructive behaviors, and in their patterns of family interaction, all areas vital to the kind of atmosphere most productive for young children's learning.

The foregoing review of literature can be summarized in the following report by Meier (1976). He reports that statistically significant differences between participating and randomly assigned control parents provide evidence of change in parent behaviors, skills, values, and attitudes. More specifically he reports the following: (a) Parents have become better teachers, using more and more complex language with their children and encouraging child verbalization more. (b) Parents have changed their attitudes, feeling less restricted and intimidated by child-rearing. (c) Parents have shown gains in knowledge, becoming more aware of the causes of child distress. (d) Parents have experienced perceptual changes, seeing their own children as individuals. (e) Parents have become more supportive, praising and encouraging child initiative and exploration more, as well as becoming more warm and affectionate. (f) Parents have increased their instructive abilities, reasoning more and relying on punishment less. (g) Parents have changed their pattern of family interaction, becoming more sensitive to their children's social, emotional and intellectual needs.

Therefore, given that evidence exists that parents can be influenced by parent education programs, the burden that rests on any specific parent education program is the demonstration that the program did, in fact, effect change in parental behaviors. Without parental behavior change, the expected benefits for children of parent programs would not follow.

The purpose of this study, then, was to measure the impact of a specific style of parent education program on the parent's behavior

with his children. It was felt that this would be best accomplished by actual measurement of parental behavior in the home. This study attempted to measure specified parental behaviors, namely, changes in supportive behaviors, instructive behaviors, and patterns of family interaction. These behaviors were measured weekly and monthly with the goal of documenting what kind of parental behavior changes take place in the home.

Hypotheses

Six hypotheses were tested in order to ascertain the impact of a parent education program on parental behavior.

1. As a result of parent education, the mother will increase her supportive behaviors towards her child.
2. As a result of parent education, the father will increase his supportive behaviors towards his child.
3. As a result of parent education, the mother will increase her instructive behaviors towards her child.
4. As a result of parent education, the father will increase his instructive behaviors towards his child.
5. As a result of parent education, the mother will show a positive change in her pattern of interaction with family members.
6. As a result of parent education, the father will show a positive change in his pattern of interaction with family members.

CHAPTER 2

METHODS

Design

A single case experimental design was chosen for this study and replicated six times. Single case designs lend themselves well to the discovery of individual changes in behavior. Since the basic issue in this study was the discovery of change in parental behavior as a result of an educational program, measurement of actual behavior was considered crucial. In group comparison designs, paper and pencil tests or other self-report measures tend to be used and average scores between groups are compared. Because each family has a different "starting point" in the nature of their interactions, it was felt that comparing "average" scores between groups of parents would mask any individual changes. Therefore, means of data collection (weekly and monthly observations of behavior in the home) were chosen that would magnify individual behavior, making it possible to compare each family against itself. The single case design was chosen as the best possible way to deal with these realities. Endres (1968, p. 101) points out that those interested in parent education face a problem in "conducting experimental research which will evaluate the effectiveness of parent education in achieving its aims."

Hersen and Barlow (1977) comment further on the nature of this issue. They feel that group designs lead to a loss of information about the individual because (a) the results are averaged over groups, thus (b) not reflecting changes in individuals, and (c) therefore ignoring within-subject variability. In other words, some individuals improve, some deteriorate, and some remain where they started. Hersen and Barlow believe this leads to weak results. Consequently, even though a group comparison study may show significant results (which indicate positive benefits gained by the parents involved), still, the question of what is happening to the individual remains to be answered. That is the question asked by this study, and hence a single case design was employed.

As mentioned before, the single case design employed in this study was performed six times. It should be noted that the particular design implemented was the result of several changes and revisions which are explained below.

This study was originally conceived as an ABA design, as defined by Hersen and Barlow (1977). That is, the A phase would be a baseline measure of parental behaviors obtained prior to implementation of the B phase, which was to be the parent education lessons or treatment. Measures of parental behavior were to continue after the lesson had been completed in order to determine the effects, if any, of the lesson on the parents' behavior.

However, weather conditions and lack of availability of the target families for measurement prior to the first parent education lesson resulted in no baseline measurements. This meant that

whatever changes might have resulted from the introduction of the lessons would be elevated from an unknown starting point. Without a baseline measure it is impossible to show cause and effect.

The original plan also included an extension of the B phase into a B1, B2, and B3 phase, representing different types of intervention. For example, the B1 phase was to have been the complete parent education program which includes the parent education lesson and assigned home activities. B2 was the lesson minus home activities, and B3 was home activities with no parent education lesson. It was hoped that these three phases would give a clear indication of variables affecting parent involvement by allowing a look at the effects of the lesson against the effects of the home activity and vice versa. However, the nature of the data collection procedure made this plan unrealistic.

For one thing, data collection only weekly and monthly did not allow enough control of the different B phases to make any generalization from them possible. This is a major difference between applications of small N designs in the lab and in applied settings. In the laboratory it is possible to keep the subjects under constant surveillance. This is nearly impossible in the applied setting. Therefore, because the subjects were often (and for extreme lengths of time) out of the experimenters' control, it was decided that these B phases would be of little value, and so the design was altered.

An attempt was made to show cause and effect in spite of the missing baseline data and problems with the B phases by changing the

design of the study. The change resulted in a BAB-ABBA design where the B subphases represent the treatment program or the independent variable (IV), and the A subphases represent a "withdrawal" or "no treatment" phase of the study. Hersen and Barlow (1977) explain that the BAB phase of this study is an excellent design and is often superior to the ABA because it emphasizes the treatment's effect, thus requiring no baseline. The BAB phase of this alteration might also be characterized as a BCB design because the A subphase is not a true withdrawal phase. The "C" subphase would represent a "non-teaching" phase because in educational settings (unlike operant experiments), it is difficult to withdraw a treatment that involves the imparting of knowledge and skills. Unlike a reinforcement schedule, which is controlled by the experimenter, the recipients of education are free to continue to apply anything they may have learned even when no additional education is being offered. In other words, educational variables, unlike specific structured reinforcements, can be internalized by the subject and do not necessarily remain external to him.

The second part or phase of the revised design was an altered ABA design. As previously explained, the ABA design is a fairly simple design. The alteration in this phase of the design consisted merely of extending the B subphase. In reality there were two B subphases, making this an ABBA design. The distinguishing feature of the B subphases in this design is the presentation, monthly, of a parent education lecture. Furthermore, as in the BAB phase, the A subphases were not true withdrawal phases.

It was hoped, through these revisions, to assess a cause and effect relationship between parent education and parental supportive behaviors, parental instructive behaviors, and parental patterns of interaction. However, because of a missing data point in the A1 subphase of the BAB phase of the design, which was not discovered by the experimenters until after collection of data, the ability to test certain hypotheses in cause and effect fashion was flawed. Specifically, the hypotheses generated for the supportive and instructional variables could not be tested, although parental behavior along these dimensions could be described over the course of the study.

The second major problem with the design lies in the fact that there are too few data points for the supportive and instructive variables in all the subphases of the design. Hersen and Barlow (1977) indicate that a standard exists for a minimum of three data points in any subphase in order to show cause and effect. It was felt at first that compliance with this standard had been achieved. Each of the single data points shown on the graphs actually represents a cumulative total of 40 observations. This is possible because the supportive and instructive behaviors were observed every 15 seconds for a 10 minute period. However, one 10 minute observation, regardless of how many times target behaviors were recorded, is not sufficient to satisfy the requirements for showing cause and effect. There should have been three such 10 minute observations in each subphase to strengthen the case for the effectiveness of the IV.

This lack of data, in addition to the already missing baseline, meant that the experimenter was tied to reporting behavioral trends for each family without being able to claim any cause and effect relationship between the treatment and parental supportive and instructive behaviors. It should be pointed out that none of these data problems exist for the AIA measure. However, in order to maintain consistency in reporting data, the AIA results will be reported like the supportive and instructive data. In other words, only long term trends and cumulative effects will be reported for any of the dependent measures.

It should also be noted that all of these alterations are in keeping with single case strategy. Hersen and Barlow (1977) emphasize the ability of single case designs to make on the spot alterations. Figure 1 is a graphic representation of the final design employed.

Subjects

The six families were chosen by invitation from among parents participating in the Carbon County, Utah parent education program. This was a county-wide pilot parent education program in its third year of implementation, involving a monthly lecture supplemented by tapes, readings, and home activities.

Eleven families were originally recruited for this study. Final selection was made according to subjects' willingness to commit to the extra data collection required for the single case design. Of the original eleven families, two refused to allow more extensive

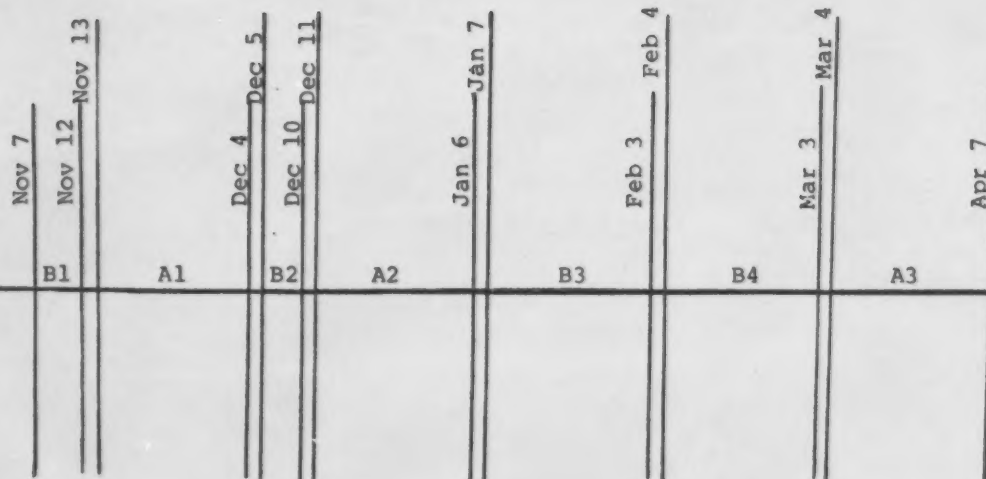


Fig. 1. Graphic Representation of the
BAB-ABBA Design Employed

data collection, and one was prevented by unexpected family circumstances. Two more families were dropped from the study because of failure to keep observation appointments and to record their dinner hours as required. One additional family was dropped from the Allred Interaction Analysis because they failed to record their dinner hours. This family was still included in the supportive and instructive measures.

Because the six families who participated in this study represent less than half of the original "sample," a concern might be expressed about lack of representativeness of the sample. However, this is not a problem of single case designs. Since each family was to serve as its own control, and generalization could only be made to similar subjects, it was not necessary to employ randomization techniques in the selection of families. Selecting subjects without using randomization is perfectly in keeping with single case designs. Chassen (1967) points out that because of this ability to select subjects without regard to personality characteristics and background factors, the single case experimenter can move towards more precise statements of cause and effect (or behavioral descriptions) because he is dealing with individuals.

All of the families involved are from the coal mining communities of Carbon County, Utah. All of the fathers were coal miners but three: one owned his own butcher shop, one managed an electronics shop, and the third was a draftsman. All of their preschoolers attend kindergarten in the Carbon County School District. Four of the families were Mormon, and two were Catholic.

None of these factors were considered important variables in the analysis of data, but are offered here only as descriptive information.

Procedures

As previously indicated, this program consisted of monthly lectures given by the kindergarten teacher, supplemented by tapes, readings, and home activities. There were five lectures. Dates and summaries of each lecture follow.

1. October 17, 1978, "Why Parents Should Teach." This meeting had primarily two purposes: to get acquainted and introduce the program. No specific parenting principles or skills were given at this time. A philosophy of how important parental influence can be was presented, and general questions about the program were answered. Since no specific concepts in Child Development were presented, this lecture was not considered in the design of this study. Subphase B1 of the design begins with lecture number two.

2. November 7, 1978, "Communication." This lesson pointed out specific communication skills and explained the effects appropriate communication styles can have on parent-child relationships.

3. December 5, 1978, "Intellectual Development." This lesson explained the developmental aspects of a child's learning, including concept development, and presented approaches for fostering learning in the kindergarten child. The emphasis was on the role of the parent in promoting a child's intellectual development.

4. January 9, 1979, "Emotional Development." This lesson explained the value of expression and acceptance of emotions

in children and ways to best deal with the emotions of anger, fear, and love.

5. February 6, 1979, "Social Development." This lesson explained the importance of social acceptance and competence and suggested ways in which parents could aid children in their development. In some ways it was a review of how all the skills in the previous lectures could be brought to bear on the developing child, so as to assist in overall social development. An underlying theme of all the lessons, however, was the importance of a nurturing atmosphere in the home. Without it, application of the specific skills would be limited in impact. For further information on this particular program, see D'Alo (1977).

The families were then asked to participate in a number of activities as part of the data collection and the experimental treatment. For example, the first B subphase included the following:

- (a) Parent education lesson with targeted behavior goal of specific instructional content presented.
- (b) Weekly activity with child.
- (c) Daily report of time spent with child.
- (d) Weekly recording of a thirty minute dinner hour.
- (e) Measurement of supportive and instructive behaviors.

The parent education lectures were previously defined in this section and represent the independent variable. The daily, weekly, and monthly measures constitute the dependent variables for this study. Weekly activities were assigned by the kindergarten teachers. Assignments were given on a monthly basis at the parent education meeting. It is not within the scope of this study (as explained

in the design section) to give attention to the content or degree of implementation of these activities. Parents were also asked to keep a record of the time spent daily with their kindergarten child. Again, for the purposes of this study, no attention will be given to this measure.

Each week parents recorded thirty minutes of one dinner time together. This was done to measure the pattern of parent-child interaction within the home. These tapes were dropped off and picked up when the experimenter visited the families for their monthly observations of supportive and instructive behaviors. The tapes were coded according to the Allred Interaction Analysis to identify vertical and horizontal behavior. Allred and Graff (1980) differentiate between vertical and horizontal behavior in this way:

Vertical relationships are exemplified by competitive struggles based on beliefs that one must appear superior to others to have a place with them, and by feelings of insecurity. By contrast, level (horizontal) relationships are represented by cooperative efforts that influence self and others in constructive ways, which are based on egalitarian beliefs that one must not strive to appear superior to belong, and by feelings of security (p. 157).

The Allred Interaction Analysis (Allred, 1976) is further divided into the following categories of interaction. The vertical field includes the following: seeking attention, bossing or punishing, creating or maintaining distance, and surrendering or giving in. The horizontal or level field, which is considered the most positive, contains: voicing observations, seeking to understand, discussing alternatives, giving support, and disclosing feelings. (In this study the terms "horizontal" and "level" are used synonymously.)

An inter-rater reliability exceeding 80% was attained for all of these categories. It should be noted that this is not a reliability coefficient, but a percentage of agreement. The inter-rater reliability was established as Allred (1976) instructs. Each experimenter memorized the constructs and practiced coding taped conversations until agreement exceeding 80% was reached for each of the categories outlined above. Further information on this, a copy of the worksheet used in coding the dinner hour recordings, and information relating to the validity of this measure are all found in Appendix A.

Each month, two experimenters visited each home and observed parents help their child perform some cognitive or motor task in a structured situation. Parents were allowed to believe that their child was being observed, when in fact, the parents were the ones being observed. This was done in order to obtain measures on the parents' supportive and instructive behaviors. It was felt that to tell the parents they were being observed would alter the behavior to be observed.

These behaviors were measured using a revised version of the supportive/instructive behaviors observation checklist currently used in the Brigham Young University Preschools (Larsen, 1972, 1975). Supportive/instructive behaviors are broken down into supportive facial (when the parent smiles, nods, winks, makes direct eye contact, grins, chuckles, or laughs); supportive verbal (any praise, statements of affection, acceptance, or exclamations of approval); physical contact (any touching, patting or holding, embracing,

squeezing); verbal instruction (all acts of singing, telling how, giving information, asking questions, giving directions); physical demonstration (when demonstrating or showing how to, manipulating materials or holding and showing objects). Appendix B contains a copy of the checklist used during the observations and information relating to the validity of this measure.

An inter-rater reliability exceeding 80% was established for the experimenters for each of the categories listed above. As with the previous measure of interaction patterns, this is a percent of agreement. The experimenters were trained by observing videotaped situations of teachers in a Brigham Young University Preschool until their agreement on the different areas reached or exceeded 80%.

In order to promote uniformity in data collection procedures, all of the supportive and instructive observations were performed by the same experimenters, in each family's home, on Saturdays. (One or two observations occurred in other days because families had prior commitments or because father had to work.) Effort was made to structure the task for each family in the same way. Appendix C contains the instructions given to each set of parents, a list of the tasks involved, and an example of one. The instructions were given each time the experimenters observed the parents. No coaching or help was given by the experimenters, and a conscious effort was made to fade into the background while observing.

Here are the specific steps in implementing these procedures:

Step 1: October 17 to November 6
(three weeks)

Selection of families and commitment to participate in a research project of the Carbon County Parent Education Project.

Step 2: Subphase B1 - November 7
to November 12 (one week)

The first B subphase included the following variables: (a) Parent education lesson with targeted behavior goal of specific instructional content presented. (b) Weekly activity with child. (c) Daily report of time spent with child. (d) Weekly recording of a thirty minute dinner time. (e) Measurement of supportive and instructive behaviors.

Step 3: Subphase A1 - November 13
to December 4 (three weeks)

This A subphase included the following variables: (a) Weekly activity with child. (b) Daily report of time spent with child. (c) Weekly recording of thirty minutes of dinner time.

Step 4: Subphase B2 - December 5
to December 10 (one week)

This B subphase included the following variables: (a) The parent education lecture. (b) Weekly activity with child. (c) Daily report of time spent with child. (d) Weekly recording of thirty minute dinner time. (e) Measurement of supportive and instructive behaviors.

Step 5: Subphase A2 - December 11
to January 6 (four weeks)

This brings us now to the change in design as outlined in the previous design section. This change will make it possible to see the effect of having had no lesson for five weeks (A2 subphase), as well as the effect of introducing an extended B subphase (B3 and B4) which contains two parent education lectures.

This A subphase includes the following variables: (a) Weekly activity with child. (b) Daily report of time spent with child. (c) Weekly recording of thirty minute dinner time. (d) Measurement of supportive and instructive behaviors.

Step 6: Subphase B3 - January 7 to
February 3 (four weeks)

This B subphase included the following variables: (a) Parent education lecture. (b) Weekly activity with child. (c) Daily report of time spent with child. (d) Weekly recording of thirty minute dinner time. (e) Measurement of supportive and instructive behaviors.

Step 7: Subphase B4 - February 4
to March 3 (four weeks)

This B subphase included the following variables: (a) Parent education lecture. (b) Weekly activity with child. (c) Daily report of time spent with child. (d) Weekly recording of thirty minute dinner time. (e) Measurement of supportive and instructive behaviors.

Step 8: Subphase A3 - March 4 to
April 7 (four weeks)

This A subphase included the following variables: (a) A meeting for parent evaluation of the parent education program, but no parent education lecture and no assigned activity with child. (b) Daily report of time spent with child. (c) Weekly recording of thirty minute dinner time. (d) Measurement of supportive and instructive behaviors.

Analysis of Data

Robinson (1976, p. 277) gives the following explanation for the analysis of small N designs: "Frequently in small N investigations no statistical test is used in evaluating data. The data are simply presented in graphic form." Graphs which show an overall comparison of each subject's behavior from one session to another are presented in the next chapter.

Each subject's data on the dependent variables was plotted against the presentation of the independent variable. More specifically, each family's data for the dependent variables (DV) of supportive behaviors, instructive behaviors, and pattern of interaction were plotted against the presentation and withdrawal of the parent education lecture (IV). Since no true hypotheses can be tested because of the missing data points and baseline, only long term trends in behavior and cumulative effects were reported. The criterion used in reporting these trends lies in the pattern of behavior established in any previous subphase. For example, in the

ABBA phase of the study observations of supportive behaviors, instructive behaviors, and patterns of interaction took place. In the first A subphase a pattern of behavior appears for each dependent variable. After application of the treatment a change in behavior should be observed. The conclusions drawn in this study are dependent on such changes in the pattern of behavior.

This manner of assessing behavior change is very similar to the way hypotheses are tested in single case designs. Granted that no other problems exist in your design, Hersen and Barlow (1977) feel that following such procedures allows one to conclude with a high degree of certainty that the treatment variable is the agent responsible for the observed changes.

In this study, no such claim of certainty can be made. However, trends become visible as parental behavior responds to the application and withdrawal of the treatment variable. In other words, even though we cannot claim changes in parental behavior were due to the effects of parent education, we can observe possible trends and report them for further study.

With this same purpose in mind, and for further explanation of how the reported trends and effects were analyzed, an explanation of single case hypotheses testing and subsequent generalization will be given.

For example, if in a BAB phase the behavior fell off during the A subphase and then rose again during the following B subphase, the hypotheses would have been supported. This would indicate that the treatment was indeed effective, for its withdrawal

resulted in the behaviors being measured to decrease. In other words, the IV has affected the DV. Hypothesis testing is much the same for an ABBA phase. If, after a withdrawal phase, the behavior slacks off and is then seen to increase with the presentation of the B subphase (parent education lecture), then the treatment is deemed to be effective. Conclusions like this can be drawn because of careful application and withdrawal of the IV and careful measurement of the DV.

Instances where the behavior does not show change (as in the BAB phase) or does not fall back to baseline (as in the ABBA phase) could mean two things. First, it could mean that the hypotheses should be rejected; or second, depending on the situation and circumstances observed by the experimenter, the hypotheses should be accepted. Hypotheses would also be rejected if there were no change in behavior after application or withdrawal of the treatment variables.

In terms of logical generalization, Hersen and Barlow (1977) feel that if one can generalize in a logical fashion from a patient whose results or characteristics are well specified as part of a homogeneous group (group designs), then one can also logically generalize from a single individual whose response and biographical characteristics are well specified (single case designs).

To increase the basis for generalization from a single case design, the experiment is repeated several times. This is identified by Hersen and Barlow (1977) as direct replication. Such replication is also helpful in establishing long term trends and cumulative

effects when no cause and effect can be shown. According to them, two procedures exist: to replicate on the same subject several times, or to replicate the entire study several times on different subjects. They note that generality of findings can only be ascertained by the replication of the experiment on different subjects. Replication on different subjects has benefits both in terms of internal validity--the ability of the design to isolate the IV as the cause of changes in the DV--and external validity--the ability to generalize findings across subjects, therapist, and setting. For example, replications on different subjects can increase validity because they strengthen the findings across subjects, therefore helping to control for the effect of the subjects being out of the experimenter's control for long periods of time. Direct replication of different subjects can also increase external validity by allowing greater generalization across subjects. It is important to keep subjects as homogeneous as possible, but in the applied setting that is often difficult. When it can be shown that a treatment has worked on several subjects, who are not as homogeneous as you would like, then the results are even stronger. It is one thing to have similar results across homogeneous subjects, but when results are similar across non-homogeneous subjects, then external validity is increased to a maximum.

Hersen and Barlow (1977) outline procedures that will also increase generality across subjects. They begin by suggesting that the operation involved in obtaining measures must be clearly specified, observable, and replicable in all respects. Secondly,

any time human observers are required, then independent reliability checks must be established. Third, when measures are taken repeatedly, then it must be done under standardized conditions. These conditions must be as exacting as possible in terms of measurement devices, personnel, time or times of day, instructions to subjects, and specific environmental conditions.

All of the above procedures were carried out as strictly as possible. Nevertheless, as previously noted, missing data points and no baseline make it impossible to show cause and effect relationships. In other words, it is not possible to isolate parent education as the IV responsible for the changes in parental behavior that were observed. However, there are still a number of functions this study can perform, such as the identification of intrafamily behavior patterns, interfamily trends, and the direction of future research.

It is through the identification of intrafamily behavior patterns that interfamily trends can be established. Such trends are established as analysis of families reveals similar behavior patterns. For example, if two or more families show a downward pattern in a particular subphase, then a trend has been established. Such analysis of trends is very important because it can lead to future research. If no trends are present, then future research would be unnecessary. If trends are apparent, then future research is necessary to identify the common variable that each family is responding to. Indeed, the presence of trends can help identify what particular variables might be responsive or unresponsive to future

research. This is possible through a knowledge of the many things the target families have in common (such knowledge is possible only with intensive single case designs such as this). In other words, if parent education is a factor held in common by all the families, it is not unreasonable to suspect it has causal significance and should therefore be exposed to future research. It is analysis just such as this that is typical of this study.

CHAPTER 3

RESULTS AND TREND ANALYSIS

The intent of this study was to analyze trends in parental behavior in response to the application and withdrawal of a parent education program. It was felt that this could best be accomplished by actual measurement of parental behavior in the home. Therefore, this study measured several specific parental behaviors: supportive behaviors, instructive behaviors, and patterns of family interaction. These behaviors were measured weekly and monthly to facilitate the trend analysis. This study is, in effect, an exploratory study.

No statistical test was used in the analysis of data for this study. This is not unusual with single case designs and occurs because of the small sample size used, with each family serving as its own control. As noted in Chapter 2, the analysis of trend was accomplished by observing the patterns of behavior established in each phase of the study. For example, in the BAB phase, if behavior fell during the A subphase, rose again during the B subphase, and was followed by a decline again in the following A subphase, then a behavior pattern is indicated. If more than one parent shows the same pattern, then a trend is indicated. During the ABBA phase, if parental behavior fell after the withdrawal of parent education in the A subphase, and is then seen to increase with the presentation of parent education in the B subphase, a trend is indicated.

Furthermore, if no change in behavior is evidenced after the application or withdrawal of treatment variables, then a trend is also indicated. In other words, behavior patterns will be observed and compared from family to family in order to determine trends.

This chapter contains graphs of parental behavior patterns from which the reported trends were analyzed. Since no specific behavior changes were anticipated, a global measure was graphed. This was also done because in an analysis of trend a standard of behavior is required that will ensure a true pattern is emerging. By requiring parents to perform a specific amount of behavior one can be sure that trends will be more visible and that the parent is actually responding as desired. Therefore, both the supportive and instructive measures were collapsed into a simultaneous rating. Simultaneous supportive was defined as any three or more supportive behaviors occurring at the same time. Simultaneous instructive was similarly defined as two instructive behaviors occurring at the same time. (This is the first time any measure of simultaneous instructive behavior has been used, and it was devised solely for the purposes of this study.) The Allred Interaction Analysis was also collapsed by computing an average of the AIA Level Ratio Score. The AIA Level Ratio Score was arrived at by dividing the number of horizontal statements made by the total number of statements made during a particular recorded interaction time. This ratio gives an indication of how positive or negative a person's pattern of communicating was by showing what percent of the interaction was horizontal. The higher the ratio score, the more positive the person's interaction

patterns. These simplifications were also made for clarity purposes. The graphs became very difficult to read when a dozen lines for each parent criss-crossed and intersected all over the page.

Behavioral patterns will be presented for each of the families in the following order: first, the supportive measures will be presented, then the instructive, and finally the Allred Interaction Analysis. The behavioral patterns will be given by family for the following six hypotheses:

1. As a result of parent education, the mother will increase her supportive behaviors towards her child.
2. As a result of parent education, the father will increase his supportive behaviors towards his child.
3. As a result of parent education, the mother will increase her instructive behaviors towards her child.
4. As a result of parent education, the father will increase his instructive behaviors towards his child.
5. As a result of parent education, the mother will show a positive change in her pattern of interaction with family members.
6. As a result of parent education, the father will show a positive change in his pattern of interaction with family members.

Supportive Behaviors

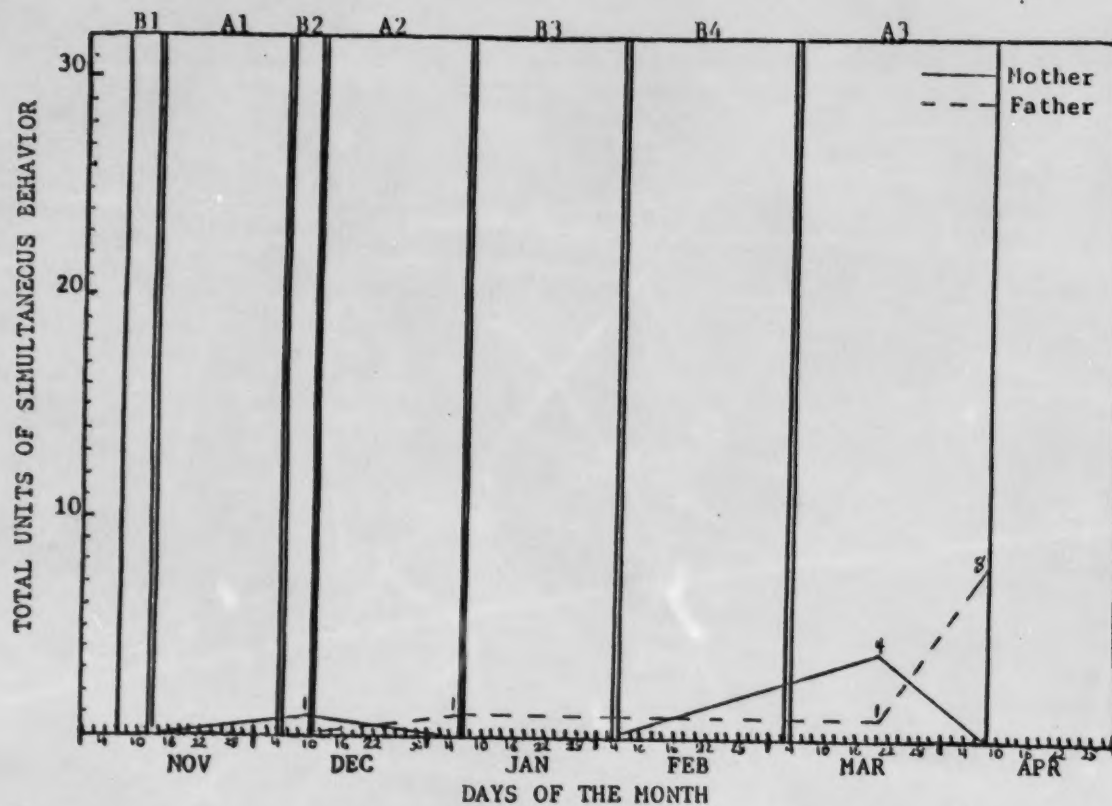
Figures 2 through 7 are graphs showing behavior patterns for each parent in the target families for the supportive measures. Parental behavior is plotted against the presentation and withdrawal of the parent education lectures. The A subphases are withdrawal

phases, and the B subphases always contain a parent education lecture. A solid line on the graph represents mother, and a broken line represents father. Each number on the graph is a value which represents how many units of simultaneous supportive behaviors occurred in a given observation. For example, a "3" means that three times during the observation that parent exhibited simultaneous supportive behavior.

Cherry Family

Figure 2 is a graph showing the simultaneous supportive behaviors for each parent in the Cherry family.

Hypothesis One. Hypothesis number one predicted that the mother would increase her supportive behaviors as a result of parent education. Design limitations require a rejection of this hypothesis; however, Figure 2 shows a small amount of change in behavior for this mother. For example, during the BAB phase, this mother shows a slight rise in the target behavior from zero units in the A1 subphase to one unit in the B2 subphase. Her behavior then drops during the next withdrawal subphase (A2) and then begins to rise again during the consecutive B3 and B4 subphases to reach its highest point of four units in the A3 withdrawal subphase before dropping off to zero. This represents a 7.5% overall change in behavior for this mother, and the behavior pattern here seems to be in response to the application of parent education (although no cause and effect can be determined). If it were possible, it might be stated that parent education had a slight but positive effect on the behavior of this



mother as her rise from the zero level to 4 units represents a 10% increase in supportive behavior.

One possible pattern of behavior visible in this mother's responses would be only temporary. Although this mother's behavior shows a 7.5% change over time, the change does not last until the end of the last withdrawal phase. This mother's behavior, then, remains relatively unchanged and no cumulative pattern is indicated.

If it could be shown that the lesson on Social Development (B4) was affecting her behavior, then we would note such a change in pattern as occurs in subphase A3. Nevertheless, it can only be reported that a change in behavior occurred.

Hypothesis two. Similar behavior change was originally predicted for this father. Although no cause and effect relationship between parent education and parental behavior can be shown, still behavior patterns are evident. For example, this father shows no change in supportive behaviors until the end of the B2 subphase, which was about a week after the Intellectual Development lecture. At this point, his behavior continues to rise until the end of the A2 subphase, where it remains at one unit of simultaneous supportive behavior until the A3 subphase. In this, the final subphase of the study, this father shows a drastic rise in supportive behaviors of 8 units indicating a 17.5% change in behavior over time. This is a 10% greater change than evidenced by the mother of this family. Furthermore, his rise from zero to 8 units is a 20% increase in supportive behavior.

There are two patterns that might be visible in this father's behavior. The first might be termed "cumulative." If parent education is responsible for the changes in this father's behavior, then the upswing in A3 might be the end result of his involvement over a five month period. It is also possible that this father's behavior is evidence of a permanent effect. In other words, if parent education is the contributing factor, then it could be that his increase in A3, as well as his steady one unit response over time, might indicate a permanent change in his behavior towards his children.

It is necessary to point out that these behavior patterns may not have existed prior to the Social Development lecture, and may reflect a short-term change due to the lecture.

Grape Family

Figure 3 is a graph showing the simultaneous supportive behavior for each parent in the Grape family.

Hypothesis one. It was originally predicted that involvement in parent education would result in an increase in this mother's supportive behavior towards her children. No evidence is available to support this hypothesis, however behavior patterns are evident.

This mother's simultaneous supportive behavior fell from 16 units during the first A subphase and then failed to rise during the B2 subphase. This represents a 40% decline in supportive behavior. Her level of behavior remained at zero until the B4 subphase. This is not to say that she was being totally unsupportive, only that no three or more supportive behaviors were occurring at

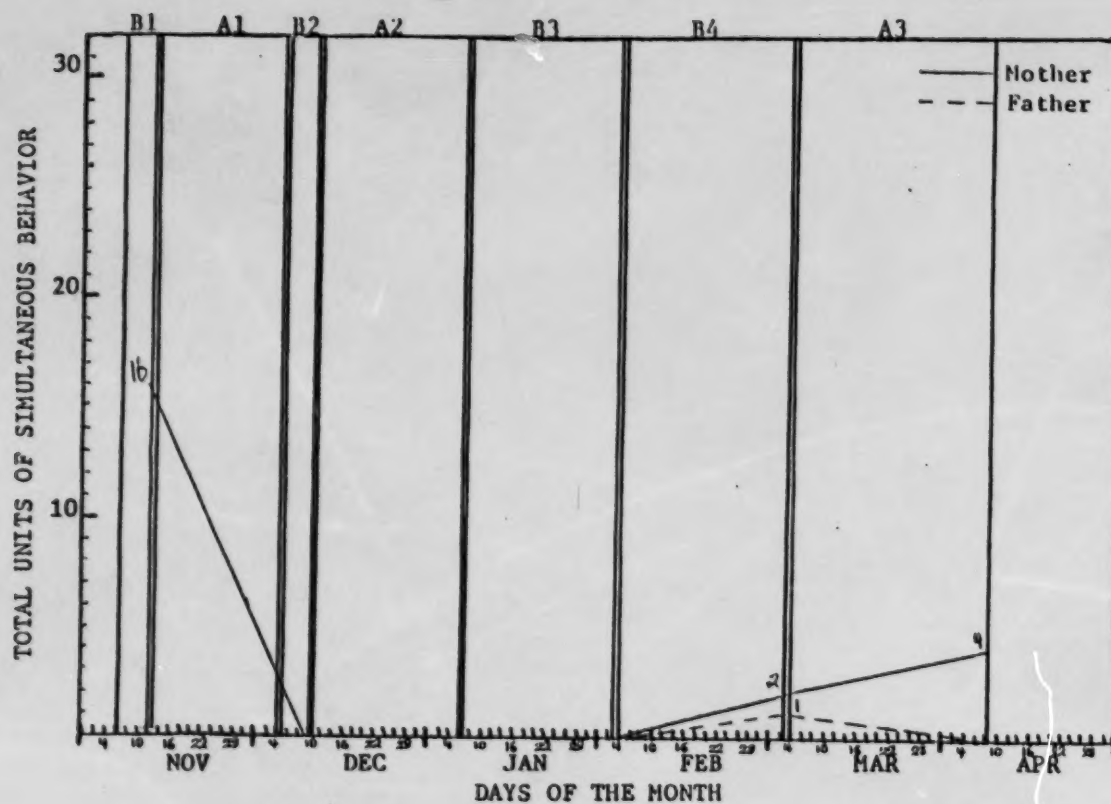


Fig. 3. Simultaneous Supportive Behavior for Grape Family Mother and Father (Total Units Occurring in a 10 Minute Session).

the same time. During the B4 subphase, this mother's behavior began to rise and continued to rise until it reached a level of 4 units during the A3 subphase (a 10% increase above the zero level). Although her level of behavior never regained its previous level (B1), still the rise was evident.

Several behavior patterns are observable in this mother's behavior. Although they are not as strong as in other mothers, nevertheless they bear mentioning. First of all, whatever factor this mother is responding to (the original intention was to show parent education as the responsible IV) it seems to yield no more than a temporary response. This mother's decline in supportive behaviors from 16 units to zero units is a 40% decrease over time. Similar drops can be observed in simultaneous supportive behaviors for other mothers. These will be pointed out below.

As a matter of interest, it was noted that these drops in simultaneous supportive behavior occurred shortly before the Christmas holidays and then began to rise a month or so after the New Year. Perhaps the Christmas holidays, with all of their cooking, planning, shopping, strained budgets, and excited children are more of a strain on mother than the transfusion they are supposed to be. All of these "extras" would come in addition to the regular routine as homemaker and could very easily affect her supportiveness. However, this explanation is hypothetical.

As previously noted, this mother's behavior increased during the B4 and A3 subphases resulting in a 10% increase in simultaneous supportive behavior. This may be evidence for a cumulative pattern,

but it is impossible to know for sure. If parent education is the contributing factor, then perhaps the observed increase is the result of continued involvement. Of course, as with other mothers, the rise could also be a positive reaction to the Social Development lecture.

Hypothesis two. This hypothesis originally predicted similar changes in simultaneous supportive behavior for this father; however, design limitations require its rejection. Even if that were not the case, this hypothesis would still be rejected on the basis of very little change in this father's behavior. For the same reasons, no behavior patterns are evident except for a tiny one in the B4 and A3 subphases. If we could show that this father was responding to parent education, then perhaps this 2.5% increase might be in response to the Social Development lecture.

It is interesting to note such a total lack of response in this father's behavior. Regardless of the inability to show cause and effect relationships, this father is not responding to anything. Such total lack of involvement with his family leaves one in awe. If parent education is responsible, then perhaps we have evidence of a failure to reach this father and convince him of the tremendous influence he can have. It will be shown that such participation is typical of the fathers in this study, but further research is required in order to isolate the IV influencing such father behavior.

Peach Family

Figure 4 is a graph showing the simultaneous supportive behaviors for each parent in the Peach family.

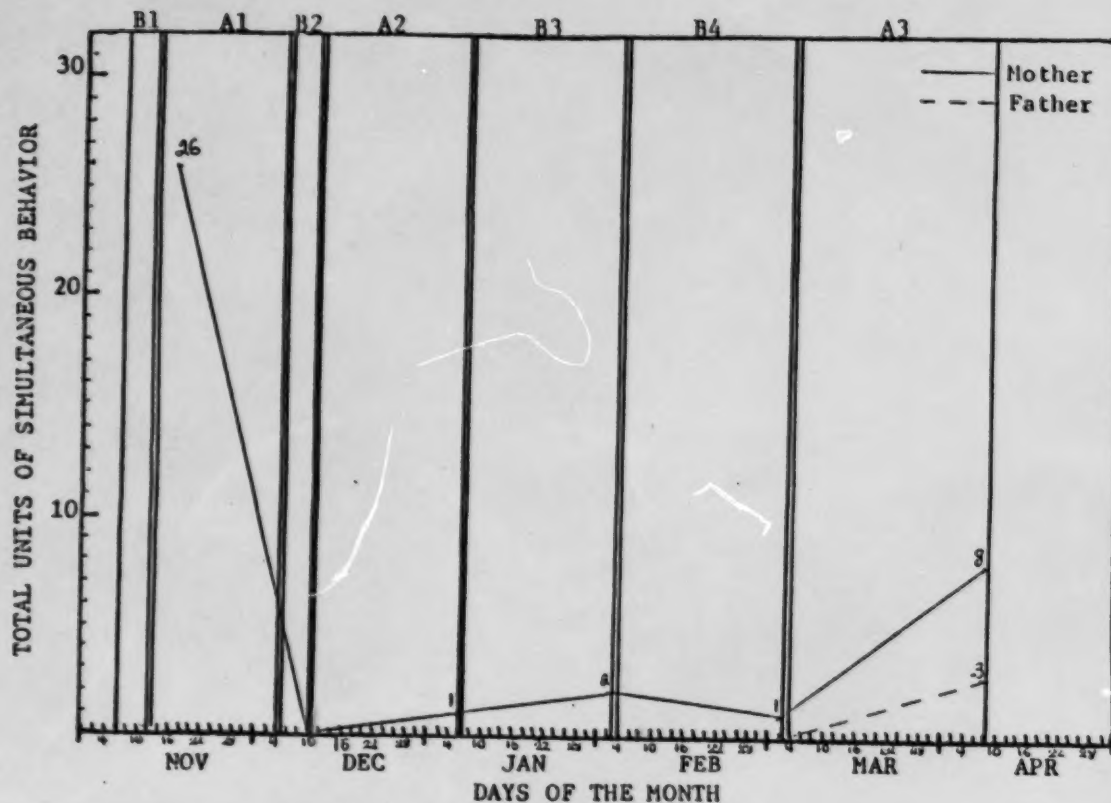


Fig. 4. Simultaneous Supportive Behavior for Peach Family Mother and Father (Total Units Occurring in a 10 Minute Session).

Hypothesis one. It was originally predicted that this mother would increase her supportive behavior as a result of participation in parent education. As previously noted, this design is incapable of showing such a cause and effect relationship and therefore the hypothesis was rejected. However, some positive behavior patterns are apparent in this mother's behavior.

This mother's behavior shows a drastic drop from a high level of supportiveness (26 units) in the A1 subphase to zero supportiveness at the end of the B2 subphase representing a 65% decline in supportive behavior. From here (A2) her supportive behavior begins to gradually increase. This increase continues throughout the additional subphases with only a slight drop at the end of the B4 subphase maintaining a 25% response level above zero. Her behavior then continues to increase throughout the A3 subphase until the end of the program. This is a 20% increase in supportive behavior from the zero level in the B2 subphase. Combining these two observations we arrive at a 45% decline in the target behavior for this mother throughout the study. Considering this alone, it might be tempting to say that parent education failed to reach this mother. Such a conclusion would be possible if cause and effect were being demonstrated in this study.

If the BAB phase is examined alone, the behavior pattern observed would be a temporary one. This becomes obvious with the 65% decline from 26 units of simultaneous supportive behavior in the A1 subphase to zero supportiveness in the B2 subphase. Were this the end of the observations, then a temporary pattern of response is all

that could be evidenced. If cause and effect were possible, then parent education would have failed to involve this mother. Again it should be mentioned that the drop to zero occurs right around Christmas time, and this could be the contributing factor towards the rapid decline and subsequent slow increase.

With the beginning of the ABBA phase, a steady increase was observed in this mother's simultaneous supportive behavior. As mentioned before, this rise is a 20% increase over time and possibly indicates a cumulative pattern. Such a pattern, were a cause and effect conclusion possible, would lend strong evidence for the effectiveness of parent education. Furthermore, the additional increase in simultaneous supportive behavior weeks after the end of the program would add even more strength. Nevertheless, it remains for further research to say for sure.

Personal observation by the experimenter reveals circumstances that may have affected this mother's positive response during the last observation. Upon entering the Peach home for the final observation, the experimenter was informed that the Peach preschool child was sick with the flu. He was also informed that the Peach child was still willing to do the task. The experimenter agreed to that, and during the observation noted that both parents were more supportive than usual. The father even outdid himself and for the first time raised his simultaneous supportive behavior above zero. Therefore, caution is advised in assuming parent education had a cumulative effect on this mother.

Hypothesis two. Similar results were originally predicted for the father of the Peach family, that is, increased simultaneous supportive behavior as a result of Parent Education. Regardless of the fact that no cause and effect relationship can be shown, little behavior patterns are visible in his behavior. Even if it were possible to test this hypothesis it would be rejected on the grounds that no change occurs in this father's established patterns of response. Even the 7.5% increase from zero to 3 units during the last observation is not enough to show a true response. This is true especially when you consider this father's supportive behavior remained at zero throughout the study.

If any pattern at all were observable, and if Parent Education could be isolated as the IV, then perhaps the rise in subphase A3 was a response to the Social Development lecture. However, in light of the explanation of events occurring at the last observation, it seems unlikely.

It seems essential to point out further observations in the Peach home that may shed more light on this apparent lack of response. (This kind of information is not available for every family but will be given where possible.) First of all, this father had the highest record of attendance for any of the fathers, but in spite of his excellent attendance, he remained nearly inert during the observations. If Parent Education were the established IV, then good attendance could be taken to mean a positive attitude towards parent education and lead one to expect behavior changes. This is not the case with this father. His high attendance level produced

no motivation to change his behavior. It seems reasonable to point out that attendance does not necessarily mean that the participant is gaining anything from the attendance. In other words, he is attending (the horse has been led to the water), but is still uninvolved. Of course, in light of this design's limitations, such explanation is hypothetical.

Radish Family

Figure 5 is a graph showing the simultaneous supportive behavior for each parent in the Radish family.

Hypothesis one. It was originally predicted that supportive behaviors would increase for this mother as a result of parent education. In spite of this design's limitations, there is little evidence to support such a hypothesis. Therefore, it would have been rejected. Nevertheless, behavior patterns can still be observed for this mother.

Although her supportive behavior starts out with a high of 20 units in the B1 subphase, it drastically falls to the zero level in the B2 subphase (a 50% decline). Simultaneous supportive behavior continues at the zero level until the end of the B4 subphase where it rises to 2 units (5% increase) and then drops again to zero. Perhaps it should be pointed out again that a zero level of simultaneous supportive behavior does not mean that the mother was totally unsupportive, only that she was not exhibiting three or more supportive behaviors at one time. None of the parents were totally unsupportive as even the most uninvolved fathers would say a word or two of

praise. Still, the fluctuations in this mother's behavior patterns represent a 45% decline in simultaneous supportive behavior over time.

Many of the mothers in this study responded in the B1 subphase with a high level of supportiveness. If this design were capable of indicating cause and effect, it might be possible to show that this common first response was due to parent education. At the very least, it could be a response to the first lecture on Communication. Nevertheless, all that can really be said is this: regardless of what variable was operating, it had only a temporary effect (as seen in the zero level of supportiveness in subphase B2) on this mother.

Hypothesis two. Similar behavior changes were originally predicted for this father. An increase in his simultaneous supportive behavior was expected as a result of his involvement in a parent education program. No evidence can be found to support such a hypothesis. Nor can any behavior patterns, other than a temporary response, be observed.

This father starts out at a substantially higher level of supportiveness than any of the other fathers (14 units). However, by the end of the B2 subphase his simultaneous supportive behavior had dropped 35% to the zero level. This is a common occurrence in this study for both mothers and fathers, and it remains for further research to say if it is a result of initial involvement in parent education or a response to specific lectures. His behavior rises in the A2 subphase to 6 units (a 15% increase) and from there on begins to decline until it again reaches zero units in the A3 subphase.

From this description, it becomes obvious that whatever this father was responding to had no lasting effect on his behavior. Simple mathematical analysis shows this to be a 30% decline in simultaneous supportive behavior over time and therefore, the behavior patterns evidenced here are only temporary.

Perhaps it should be noted that a possible stimulus behind the rise of the Radish mother's behavior in the B4 subphase might have been the absence of father. During the first observation of supportive behaviors, mother was very enthusiastic and got down on the floor with her child. During the same observation the Radish father was supportive from an armchair position. Upon observing the second time it was noted that the roles had reversed. The mother sat in the armchair, and the father got down on the floor to work with the child. It remained that way until B4 observation when father was absent. One can only speculate as to what caused this role reversal.

Rutabaga Family

Figure 6 is a graph showing the simultaneous supportive behavior for each parent in the Rutabaga family.

Hypothesis one. It was originally predicted that the Rutabaga mother would increase her supportive behavior towards her children as a result of involvement in parent education. No test of this hypothesis is possible; however, behavior patterns can be observed.

A cumulative pattern can be seen in the response of this mother. Although it is impossible to know what this mother is

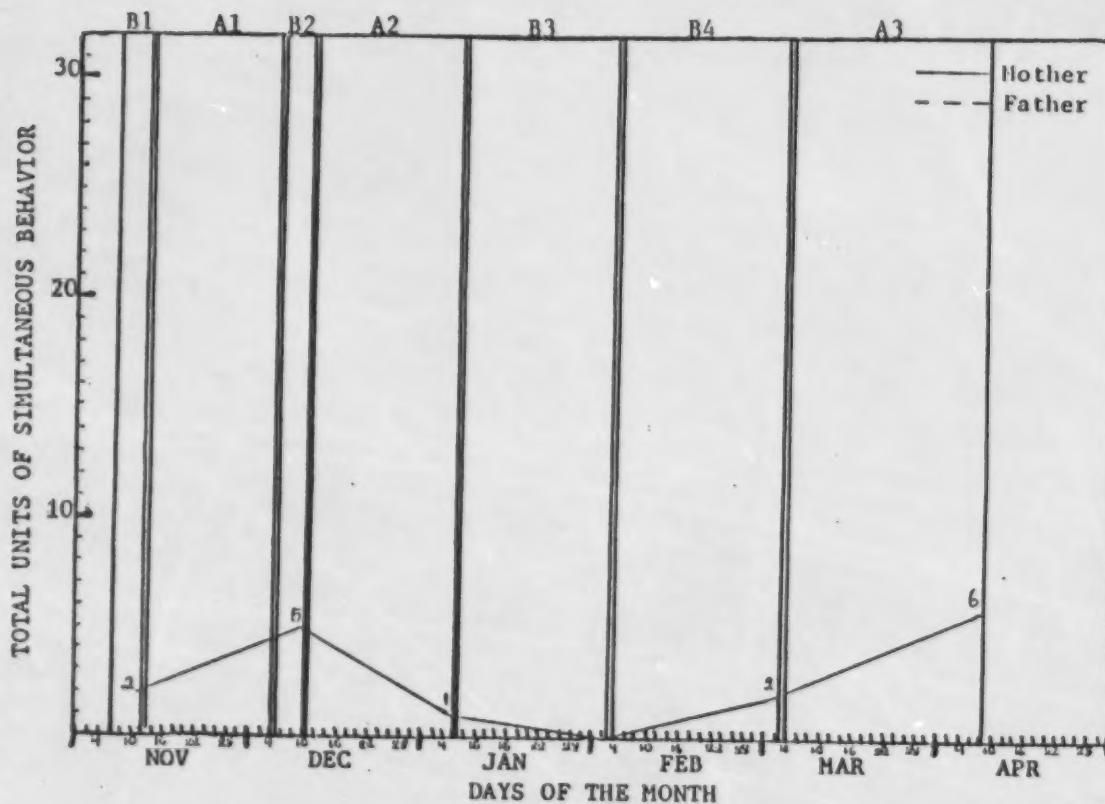


Fig. 6. Simultaneous Supportive Behavior for Rutabaga Family Mother and Father (Total Units Occurring in a 10 Minute Session).

responding to, her simultaneous supportive behavior increases from 2 units in the B1 subphase to 5 units in the B2 subphase. This represents a 7.5% increase. However, in the A2 subphase, her behavior drops to 1 unit (10% decline) and continues to drop until it reaches zero (12.5% decline) at the end of the B3 subphase. From there on out it continues to rise steadily, reaching an eventual 6 units. This is 1 unit higher than in the B2 subphase and represents a 15% increase in supportive behavior from the zero level and a 10% increase over time.

Not only does there seem to be a cumulative pattern in this mother's behavior, a pattern of some permanence is indicated as well. This is evidenced by the continual rise in supportive behavior from 2 units to 6 units during the A3 subphase.

Again, if it were possible to show cause and effect, it might be that parent education had a positive effect on this mother's behavior. This positive effect would be evidenced by increases in the B2, B4, and A3 subphases (representing the cumulative pattern) and by the withdrawal subphase. Only future research can say for sure.

Hypothesis two. No behavior patterns can be observed in this father's response as he remained at the zero level throughout the study. If parent education is the contributing factor in the changing behavior patterns thus observed, then it had no effect on this father.

Squash Family

Figure 7 is a graph showing the simultaneous supportive behavior for each parent in the Squash family.

Hypothesis one and two. At best, only a temporary effect can be observed in this mother's patterns of behavior. She starts out with a high level of supportiveness (24 units) in the B1 subphase, but her behavior dropped steadily until it reached the zero level in the B3 subphase (a 60% decline) and never rose again. The decline from 24 units to 1 unit in the A2 subphase is a 57.5% decline in simultaneous supportive behavior.

It is interesting to note that in spite of the maintenance of zero simultaneous supportiveness throughout most of the observations, still we note the tremendous initial response that is so typical of many of the mothers in this study. Whether or not it is in response to parent education or to a specific lecture, it represents a trend in and of itself.

No behavior patterns are observable in this father's behavior. He shows no change in behavior as his level of supportiveness remains at zero throughout the study.

Instructive Behaviors

Figures 8 through 13 are graphs showing the behavior patterns for each parent in the target families for the simultaneous instructive measure. Parental behavior is plotted against the presentation and withdrawal of the parent education lectures. The A subphases

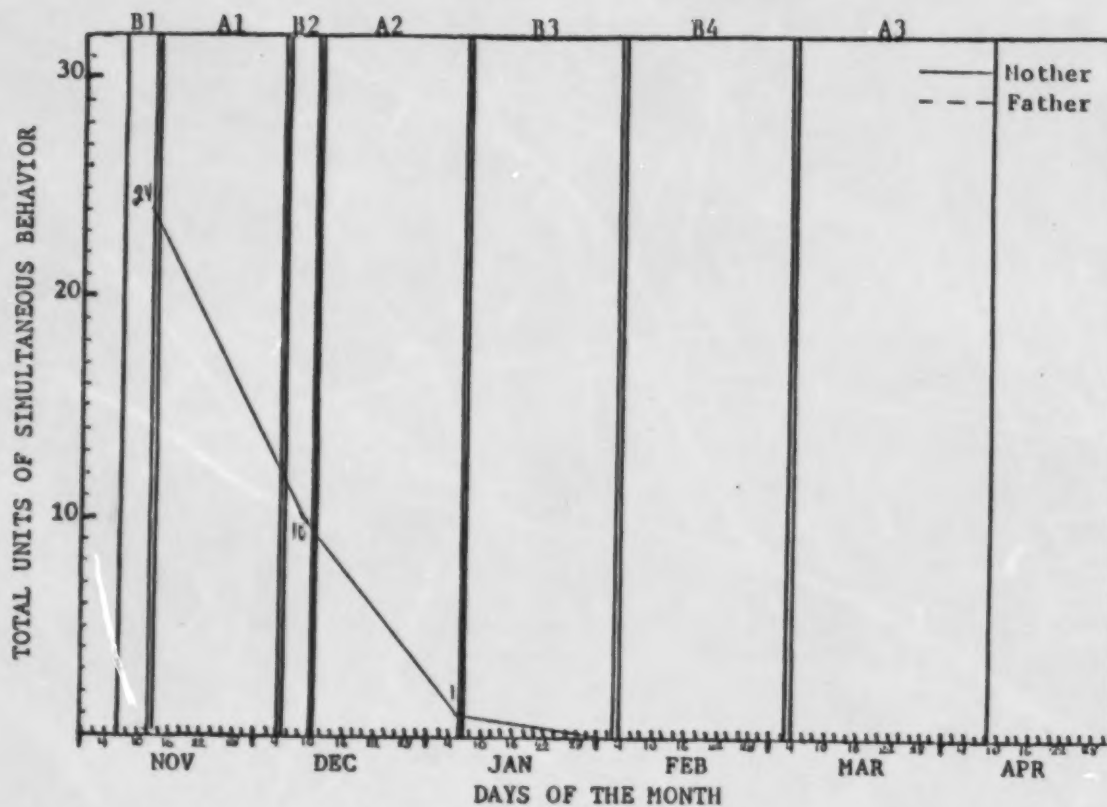


Fig. 7. Simultaneous Supportive Behavior for Squash Family Mother and Father (Total Units Occurring in a 10 Minute Session).

are withdrawal phases, and the B subphases always contain a parent education lecture. A solid line on the graph represents mother, and a broken line represents father. Each number on the graph is a value which represents how many units of simultaneous instructive behavior occurred on a given observation. For example, a "3" means that three times during the observation, that parent exhibited simultaneous instructive behavior.

Cherry Family

Figure 8 is a graph showing the simultaneous instructive behavior for each parent in the Cherry family.

Hypothesis three. It was originally predicted that as a result of parent education, this mother would increase her instructive behaviors towards her children. No evidence is available to support this hypothesis because of design limitations, however, some interesting behavior patterns can be observed.

For example, this mother begins with a positive initial reaction that is very typical for the mothers in this study. She begins with 9 units of simultaneous instructive behavior in the A1 subphase (this family was unavailable for observations in the B1 subphase, and therefore their initial observation was put off until the A1 subphase). It could be parent education this mother is responding to, the Communication lecture, or the mere presence of the observers. Regardless, her positive response is apparent. Next, her instructive behavior falls to 7 units in the B2 subphase (a 5% decline) and then to 1 unit in the A2 subphase (a 20% decline).

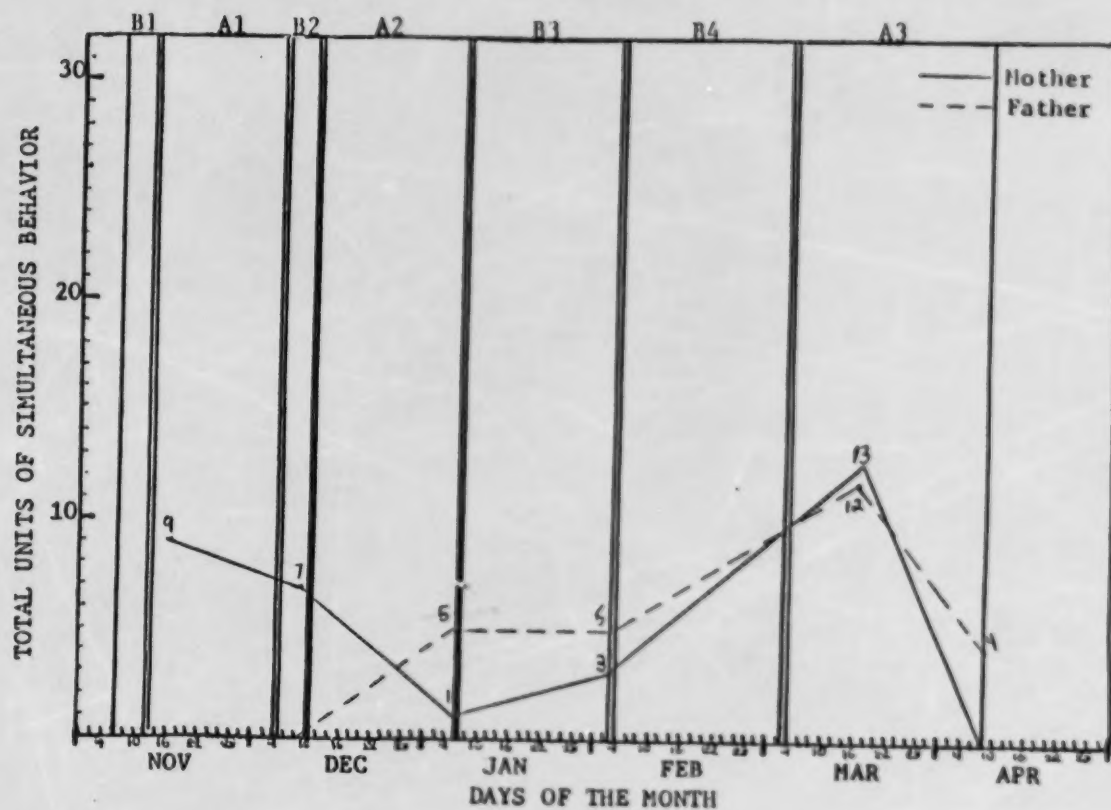


Fig. 8. Simultaneous Instructive Behavior for Cherry Family Mother and Father (Total Units Occurring in a 10 Minute Session).

From this point, simultaneous instructive behavior climbs steadily throughout the B3 and B4 subphases until it reaches its highest level of 13 units (a 32% increase) in the A3 subphase before falling off to the zero level (a 32.5% decline). Over time, the rise from 9 to 13 units represents a 10% increase.

By looking at this mother's behavior in the B3, B4, and A3 subphases, it might be that a cumulative pattern is indicated. The steady rise from 1 unit to 13 units represents a 30% increase in instructive behavior. That is a tremendous increase in behavior, and if cause and effect were possible, there might be strong evidence for the effectiveness of parent education. However, with the subsequent return to the zero level, only a temporary pattern is evident.

Hypothesis four. It was originally predicted that the father would increase his instructive behaviors as a result of parent education. Design limitations require a rejection of this hypothesis; however, if cause and effect were possible, evidence from the Cherry father's behavior would support hypothesis four.

Whatever this father is responding to, he begins at a snail's pace. His simultaneous instructive behavior remains at zero throughout the BAB phase of the study. If this were the only phase of the study, his behavior would warrant a rejection of the hypothesis, and no behavior patterns would be observable. However, his behavior in the ABBA phase jumps to 5 units in the A2 subphase and continues to increase until it reaches a high point of 12 units at the end of the A3 subphase. From there it drops to a value of 4

units at the end of the final withdrawal subphase. This rise from zero to 12 units is a 30% increase in simultaneous instructive behavior; while the subsequent fall to 4 units is a 20% decline. Overall, the change from 5 units to 13 units was a 17.5% increase.

Mother and father seem to have been affected similarly in the ABBA phase of the study. Both of them show a positive response through an increase in instructive behavior in the B4 and A3 subphases of the study. However, the father's behavior does not fall off to zero as does the mother's in the A3 subphase. His behavior remains at a level of 4 units indicating a possible permanent behavior pattern. This might also indicate a cumulative pattern for him as well.

It is also possible that both parents were equally influenced by the Social Development lecture as both of their behaviors rose considerably in the B4 subphase. If cause and effect were possible, this could be the beginning of a trend showing the Communication, Emotional Development, and especially the Social Development lectures to be more interesting to parents than the Intellectual Development lecture. Of course, these explanations are offered hypothetically. Further research will determine what particular variable is the IV in this case.

Grape Family

Figure 9 is a graph showing the simultaneous instructive behavior for each parent in the Grape family.

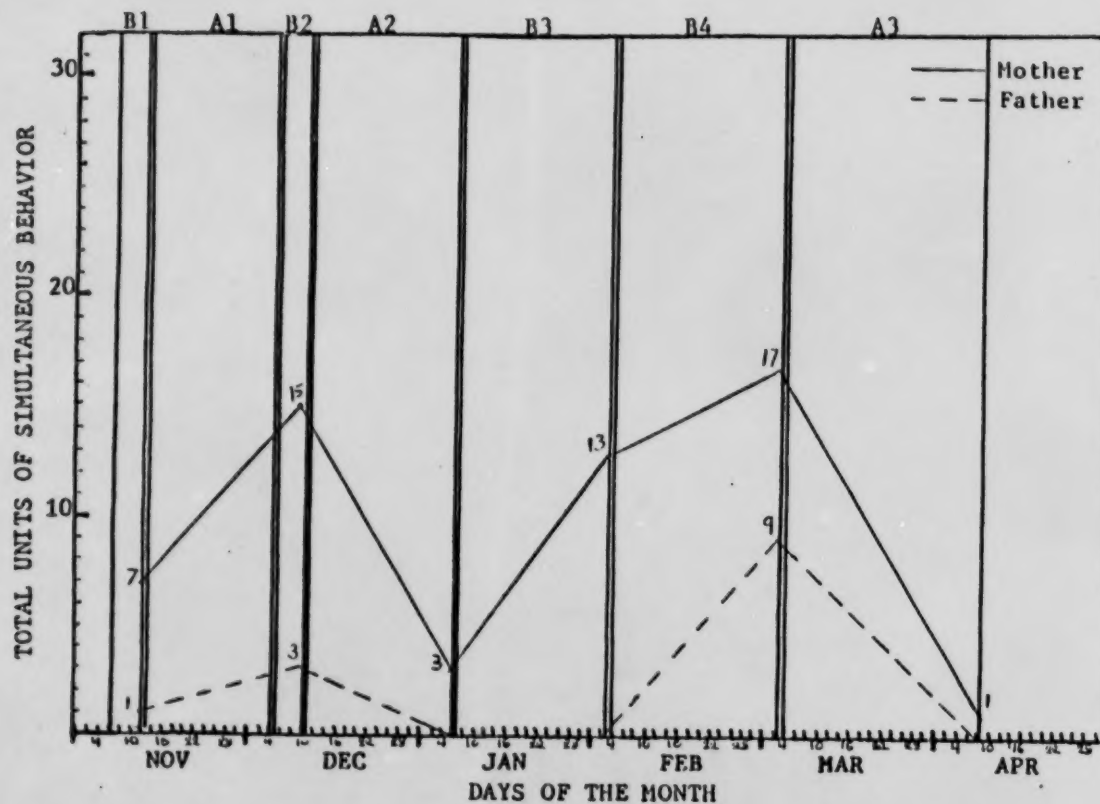


Fig. 9. Simultaneous Instructive Behavior for Grape Family Mother and Father (Total Units Occurring in a 10 Minute Session).

Hypothesis three. It was originally predicted that this mother would increase her instructive behavior towards her children as a result of parent education. Design limitations require a rejection of this hypothesis, however, several behavior patterns can be observed.

In the early BAB phase, this mother's simultaneous instructive behavior rose from 7 units (B1) to 15 (B2). Were there no missing data points in the A1 subphase, it would be possible to show a cause and effect relationship with parent education as the contributing factor. Nevertheless, the change in behavior here represents a 20% increase over time. From this high of 15 units this mother's simultaneous instructive behavior fell to a low of 3 units in the A2 subphase resulting in a 30% decline in the observed behavior. A reversal occurs at this point, and instructive behavior begins to rise again reaching a high of 13 units in the B3 subphase and its highest point of 17 units in the B4 subphase. It is important to note that such a pattern is in accordance with the original predictions and lends strength to this analysis of trend. The heights obtained throughout the B3 and B4 subphases represent a 35% increase over time, however, in the next subphase (A4) instructive behavior for this mother drops to the 1 unit level which represents a 40% decline.

As mentioned above, given a more sound design, this mother's behavior might have been a positive indication of the effectiveness of parent education. Her behavior responds much as anticipated with ups and downs that correspond to the application and withdrawal of

the IV. In spite of the fact that no such relationship can be shown, some interesting behavior patterns are apparent. For example, the increases of simultaneous instructive behavior in the BAB phase and the B3 and B4 subphases of the ABBA phase might easily be evidence of a cumulative effect. Whatever this mother was responding to had its strongest effects in the B subphases and its weakest effects during the A subphases.

Hypothesis four. It was originally predicted that this father would increase his instructive behavior as well. Design limitations require a rejection of this hypothesis; however, behavior patterns in this father's behavior can be observed.

In the BAB phase, this father shows a slight increase in his simultaneous instructive behavior from a level of one unit to three units. This minimal 5% increase falls to the zero level in the A2 subphase and remains at that level throughout the subsequent B3 subphase. In the next subphase (B4), his instructive behavior makes a substantial 22.5% increase to the 9 unit level. Nevertheless, his behavior returns to zero again in the final A3 subphase.

If it were possible to identify what variable or variables this father was responding to, perhaps parent education could be identified as the determinant one. It is also possible that the 22.5% increase in the B4 subphase was due to the Social Development lecture. In spite of the design limitations, this father's instructive behaviors show an obvious temporary effect.

Peach Family

Figure 10 is a graph showing the simultaneous instructive behavior for each parent in the Peach family.

Hypothesis three. It was originally predicted that the mother would increase her instructive behaviors towards her children as a result of parent education. No support is available for this particular hypothesis because of design limitations; however, behavior patterns in this mother's behavior are evident.

This mother shows no change in response during the BAB phase of the study. The missing data points in this phase make it impossible to make any inferences concerning her response to parent education. Were cause and effect possible, however, it might be said that by maintaining a level of 4 units of simultaneous instructive behavior, this mother is exhibiting either normal instructive behavior or she is responding positively to parent education.

In the next major phase of the study (ABBA), specifically in the A2 subphase, this mother makes a 6 unit or 15% increase in simultaneous instructive behavior. In spite of the fact that this is a withdrawal phase, something is influencing this mother to increase her instructive behavior. From here, this mother continues to increase her behavior and the result is another 7 units or a 17.5% increase. Altogether this rise to 17 units from 4 units represents a 32.5% increase over time. During the next B4 subphase, her instructive behavior only falls one unit, which is a 2.5% decrease. Whatever was influencing this mother in the B3 subphase has maintained most of its influence in the B4 subphase. However, it loses its

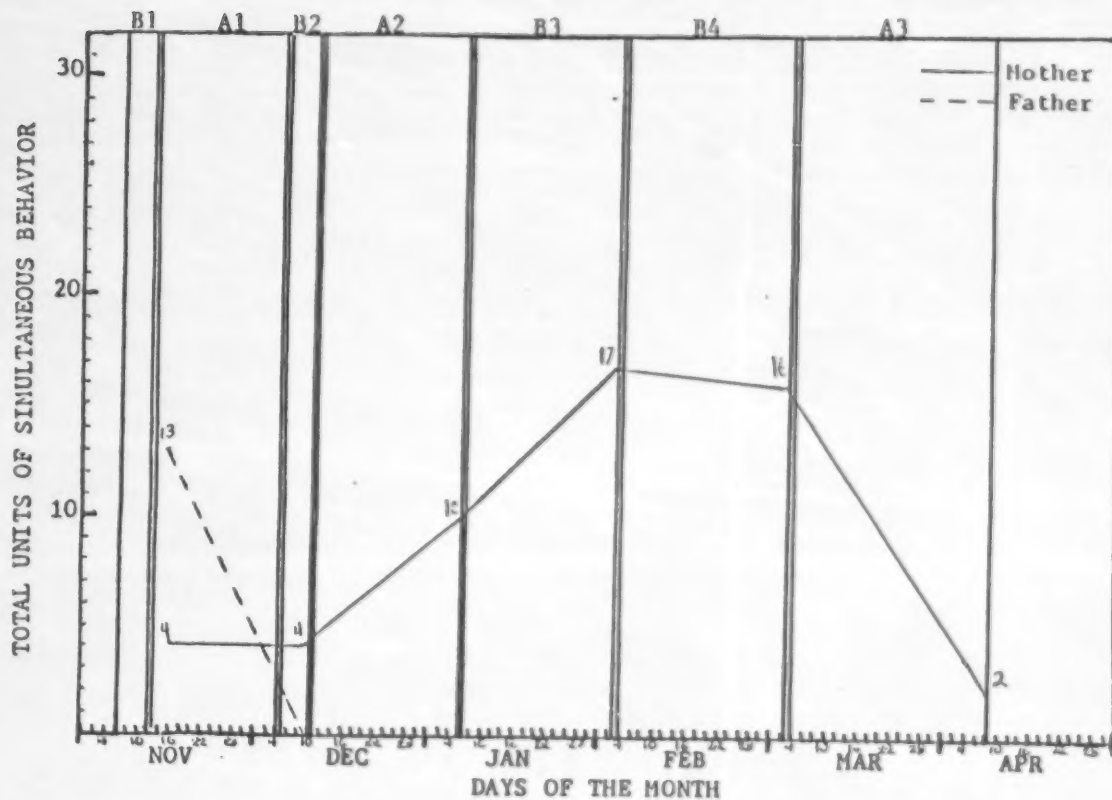


Fig. 10. Simultaneous Instructive Behavior for Peach Family Mother and Father (Total Units Occurring in a 10 Minute Session).

effectiveness in the A3 withdrawal subphase and plummets to a low of 2 units of simultaneous instructive behavior. This is a 30% decline which results in 5% less instructiveness than she began with. Here again it is impossible to say for sure what the determinant variable is; however, it is interesting that such a dramatic increase and decrease occur during presentation (B3 and B4) and withdrawal (A3) subphases.

There appear to be a couple of behavior patterns in the responses of this mother. First of all, a cumulative response may be evident in the B3 and B4 subphases. Secondly, whatever cumulative effect is present, it is only temporary as can be seen in the A3 subphase. It is important to note that there are not enough data points in each subphase to claim cause and effect. On the other hand, it is not impossible that the cumulative and temporary patterns in this mother's behavior could be in response to parent education. After all, her behavior does respond to the application and withdrawal phases.

There exists an interesting observation that might lend further light to this situation. It has already been pointed out in the supportive section that during the last observation the Peach child was ill. It is possible that the Peach mother saw this as a time for supportiveness and not a time to be instructive, and thus the low level of instructive behavior. If this were the case, and if cause and effect were possible, then more evidence would exist for the cumulative effect.

Hypothesis four. It was originally predicted that the father would increase his instructive behaviors as well. No evidence is available to support this hypothesis regardless of design limitations. This father makes no change in his simultaneous instructive behavior from the B2 subphase throughout the rest of the study. Prior to the B2 subphase, his instructive behavior falls from 13 units to zero. This is a 32.5% decrease in instructiveness.

If it were possible to show cause and effect, then there are two possible explanations for this behavior. First, he could be responding to the Communication lecture, or he might be responding to the presence of the observers. Nevertheless, his response is highly temporary.

Radish Family

Figure 11 is a graph showing the simultaneous instructive behavior for each parent in the Radish family.

Hypothesis three. It was originally predicted that involvement in parent education would result in an increase in this mother's instructive behavior towards her children. If this design allowed for cause and effect relationships to be shown, some support would be available for this hypothesis. Likewise, observation of behavior patterns for trend analysis is equally possible.

This mother begins at a fairly high level of instructiveness (10 units or 25% in the B1 subphase). Her behavior then makes a 22.5% decline as it falls to a level of 1 unit in the B2 subphase. Following this decline, her instructive behavior rises to the 15

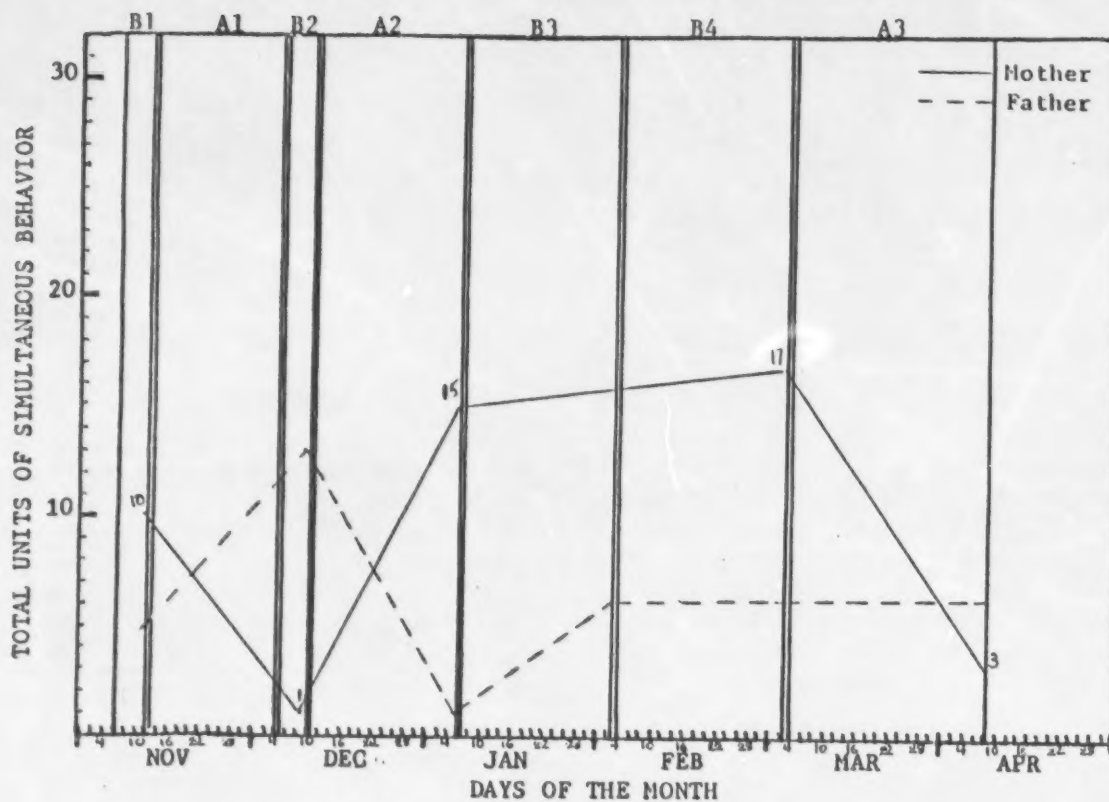


Fig. 11. Simultaneous Instructive Behavior for Radish Family Mother and Father (Total Units Occurring in a 10 Minute Session).

unit or 37.5% level. This is a 35% increase from the 1 unit level. During the next two treatment phases her behavior increases only 1 unit to the 42.5% level of instructiveness. It then falls in the A3 subphase to 3 units representing a 35% decline to 7.5% instructiveness.

Again, the typical positive initial response can be noted in the B1 subphase. As previously noted, such initial responses are typical of most mothers in this study. This is especially true for the supportive measures. However, several mothers exhibit similar responses for the instructive measure.

If the BAB phase were all that could be considered, this positive initial response would not count for much because of the fall to 1 unit in the B2 treatment subphase. However, the subsequent rise to 17 units in the ABBA phase indicates that this mother is responding to something other than the presence of the observers in the first subphase. Even if it were possible to determine that parent education was indeed the IV affecting her behavior, there is still another possible explanation.

This explanation has been previously noted in the supportive behavior section. It was pointed out that during the first observation this mother was very supportive of her child's efforts. Indeed she was quite eager for her child to succeed at the task. This is reflected in her instructive behaviors as well. It was further pointed out that upon the next visit to the home a reversal in roles had occurred. At this second observation the Radish father was now the eager one, and the Radish mother remained quite subdued. It is

possible that a similar reaction occurred to the one hypothesized in the supportive measures section. One parent did the coaching and the other remained relatively uninvolved. However, the pattern is not quite the same for the instructive behaviors as for the supportive behaviors. Whereas the Radish mother remained relatively unsupportive until the father's absence in the B4 subphase, her instructive behaviors snap back in the A2 subphase (in spite of the fact that A2 is a withdrawal subphase). As in the supportive measure, her instructive behavior increases further during the father's absence in the B4 subphase.

Regardless of this hypothetical explanation, there seems to be only a temporary pattern emitted by this mother. This is evidenced by the 35% decline in instructiveness during the A3 subphase. There might also have been evidence for a cumulative pattern had this decline not occurred. Therefore, whatever this mother is responding to, it had no permanent impact on her behavior.

Hypothesis four. It was originally predicted that parent education would result in increased instructive behavior for the Radish father as well. Design limitations require a rejection of this hypothesis; however, if it were possible to show cause and effect, support for such a hypothesis would have been possible. As it is, patterns in behavior are still observable.

This father began the program only half as instructive as his wife (5 units or 12.5%), yet by the end of the B2 treatment phase his instructive behavior had increased to a high of 13 units (a 20% increase). A hypothetical explanation for this increase has

already been referred to in the presentation of the Radish mother's behavioral changes. In spite of the missing data points in the A1 subphase, this father responds very much as expected in the BAB phase. Then, again as expected, his behavior dropped 30% in the A2 subphase to its alltime low of 1 unit or 2.5% instructiveness. From this low his behavior increases 12.5% to 6 units in the B3 subphase because he was not there; however his level of simultaneous instructive behavior maintains its 6 units throughout the A3 subphase. It is important to note that behavior patterns that fluctuate in accordance with the presentation and withdrawal of treatment lend strong support for parent education as the determinant IV in spite of the design limitations. Future research of this nature will determine this for sure.

Although his absence from the B4 subphase observation makes it impossible to ascertain any cumulative effect, the fact that his instructive behavior ended 1 unit or 2.5% higher than where he started could be evidence for a cumulative as well as a permanent effect on this father's behavior. Keep in mind that it is impossible to say for sure that parent education was responsible for the changes reported here.

Rutabaga Family

Figure 12 is a graph showing the simultaneous instructive behavior for each parent in the Rutabaga family.

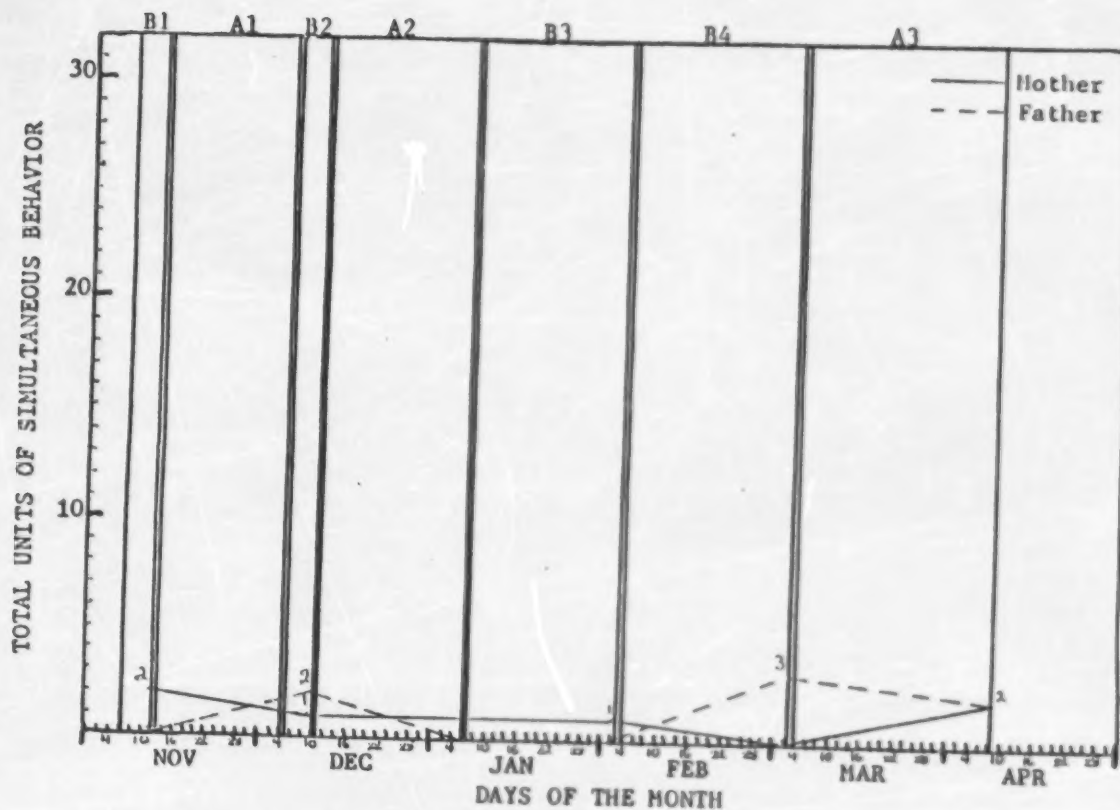


Fig. 12. Simultaneous Instructive Behavior for Rutabaga Family Mother and Father (Total Units Occurring in a 10 Minute Session).

Hypotheses three and four. It was originally predicted that this mother and father would increase their instructive behaviors towards their children as a result of parent education. Regardless of design limitations, this hypothesis would have been rejected because there was not enough change in parental behavior to attribute to parent education or anything else. Even if the slight changes evidenced were in response to the treatment application and withdrawal, the effect was nil because these parents begin and end at the same low level of 2 units or 5% instructiveness. Therefore, assuming a cause and effect relationship, it is doubtful whether parent education effected any change in this mother's or this father's instructive behavior.

Squash Family

Figure 13 is a graph showing the simultaneous instructive behavior for each parent in the Squash family.

Hypothesis three. It was originally predicted that this mother would increase her instructive behavior towards her children as a result of involvement with parent education. Given a more sound design, evidence from this mother would tend to support such a hypothesis. As it is, design limitations require the rejection of this hypothesis. Nevertheless, her patterns of behavior are worth noting.

This mother's simultaneous instructive behavior increases from 4 units in the B1 subphase to 8 units in the B2 subphase. This represents a 10% increase in simultaneous instructive behavior. In

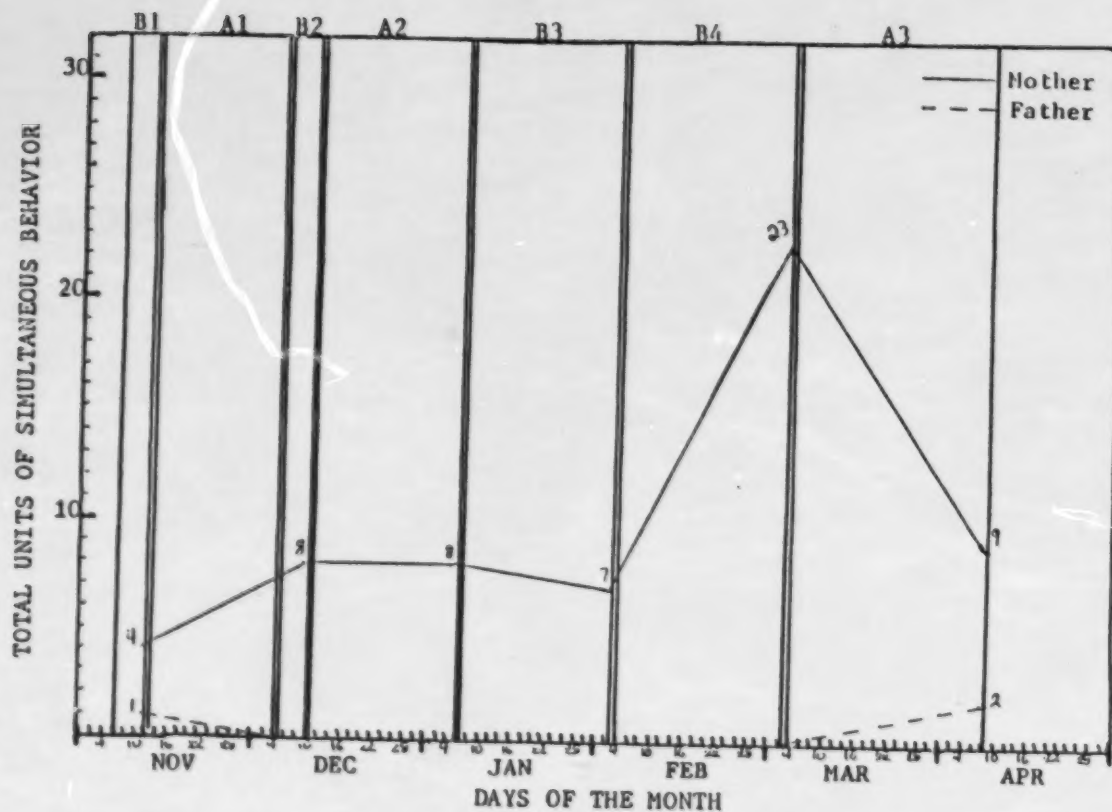


Fig. 13. Simultaneous Instructive Behavior for Squash Family Mother and Father (Total Units Occurring in a 10 Minute Session).

spite of the missing data points in subphase A1, this mother's behavior is much as expected for the BAB phase and could be taken as evidence in support of parent education. Although the next subphase (A2) is a withdrawal phase, this mother maintains her level of instructiveness. Then, in the B3 subphase, her behavior drops 2.5%. This is not much of a drop, and for all purposes it could be said that this mother maintained her level of instructiveness throughout the B3 subphase. From this point, she increases her instructiveness to an alltime high of 23 units or 57.5% level. This is a 40% increase from her level in the B3 subphase. In the next and last subphase, her simultaneous instructive behavior declines 35% to a level of 9 units.

From the above description several behavior patterns can be noted. First of all, there seems to be strong evidence for a cumulative effect. This is evidenced by the continued increase in instructiveness throughout the B subphases of the study. Not only is there evidence for a cumulative effect, but a permanent effect seems possible as well. This is evidenced by the 9 unit level at the end of the 5 week withdrawal subphase which is higher than any other except the B4 subphase. Lastly, the 23 unit high in the B4 subphase might be a response to the Social Development lecture. Of course, it is possible to hypothesize that all of these behavior patterns were a result of involvement in parent education. On the other hand, it is impossible to know for sure.

Hypothesis four. Similar behavioral changes were originally predicted for this father, that is, as a result of parent education he would increase his instructive behaviors towards his children. Regardless of the design limitations, no evidence could have been found to support this hypothesis. Furthermore, no patterns of response are evident.

Patterns of Family Interaction

Figures 14 through 18 are graphs of the AIA Level Ratio Score for each parent in the target families. Each numerical value represents a ratio score from a weekly dinner hour recording. All of the ratio scores on the graph were derived using the Allred Interaction Analysis (Allred & Graff, 1980). The ratios were arrived at by dividing the number of horizontal statements made by the total number of statements made during the recorded dinner hour. This yields an AIA Level Ratio Score for each set of parents in the study. A value of 1.0 means that no vertical statements were made, and a value of .50 indicates a one to one ratio of horizontal to vertical statements. In other words, the higher the value, the more positive the interaction.

These ratios are plotted against the presentation and withdrawal of the parent education lectures. Each A subphase is a withdrawal phase, and each B subphase contains a parent education lecture. A solid line on the graph represents mother, and a broken line represents father.

Figures designated 14a, 15a, and so forth are graphs of a similar construction except that the ratios have been collapsed

into a monthly average. This has been done for clarity in observing the overall trend in behavior.

Cherry Family

It was found necessary to drop the Cherry family from this measure because of their failure to record one hour of dinner time once a week. The few times they did record dinner time resulted in too sporadic a measure to give reliable results. They are included in the first two measures, however, because they were very good about keeping the appointment made for home observations.

Grape Family

Figures 14 and 14a are graphs of the AIA Level Ratio Scores for each parent in the Grape family.

Hypothesis five. It was originally predicted that this mother would show a positive change in her pattern of interaction with family members as a result of involvement in parent education. Although this design is incapable of making such a prediction, patterns of behavior can still be observed and analyzed.

Perhaps the most obvious response pattern is the great amount of variability in this mother's interactions. Each subphase is characterized by highs and lows which often vary from one another by as much as 25%. For example, in subphase A1 there is a 19% plummet from .73 to .54 Level Ratio Score. This is followed by a 10% increase to .64 which is followed by a 24% decline to .40.

It is also possible to note another pattern in this mother's behavior. Careful inspection of the ever increasingly low values

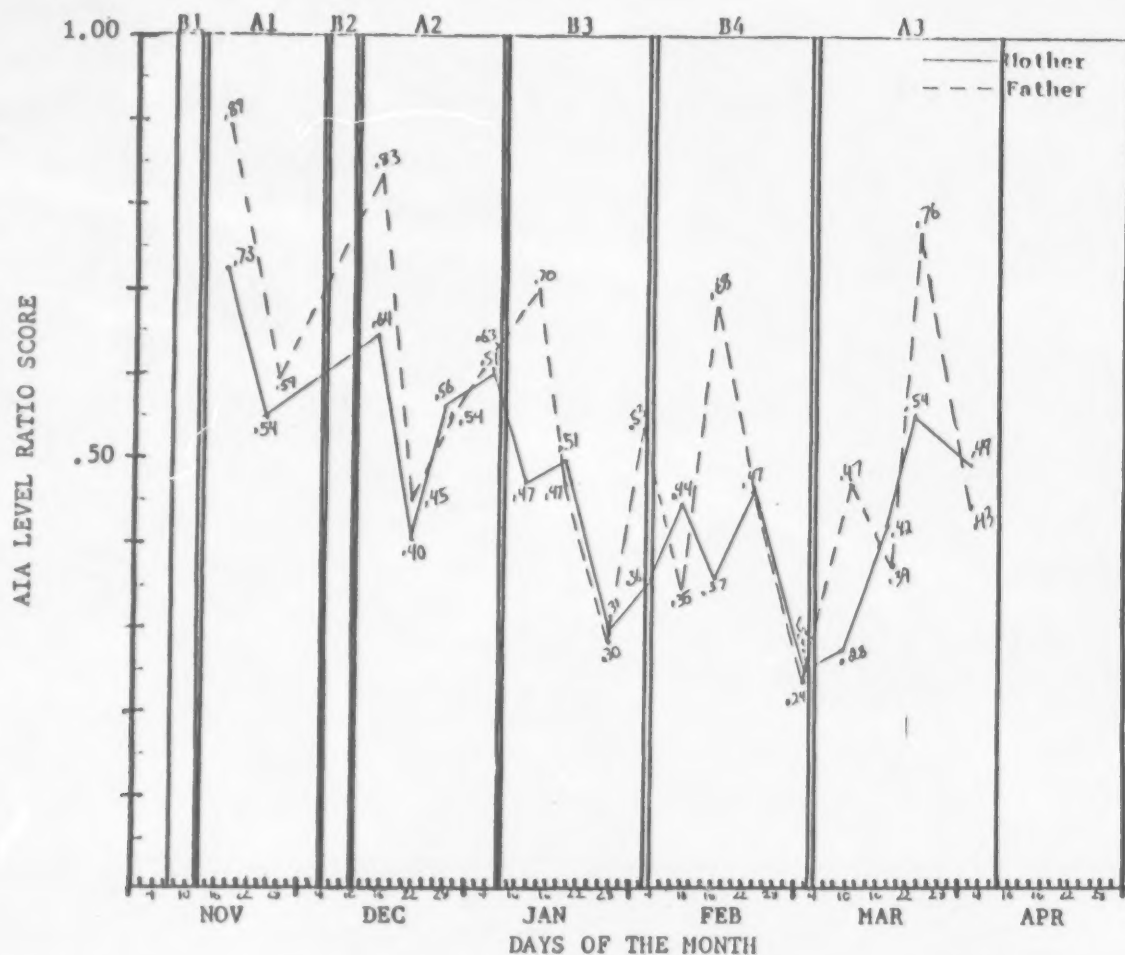


Fig. 14. Allred Interaction Analysis Level Ratio Score for Grape Family Mother and Father (Ratio of Horizontal to the Total Statements Made in a 30 Minute Session).

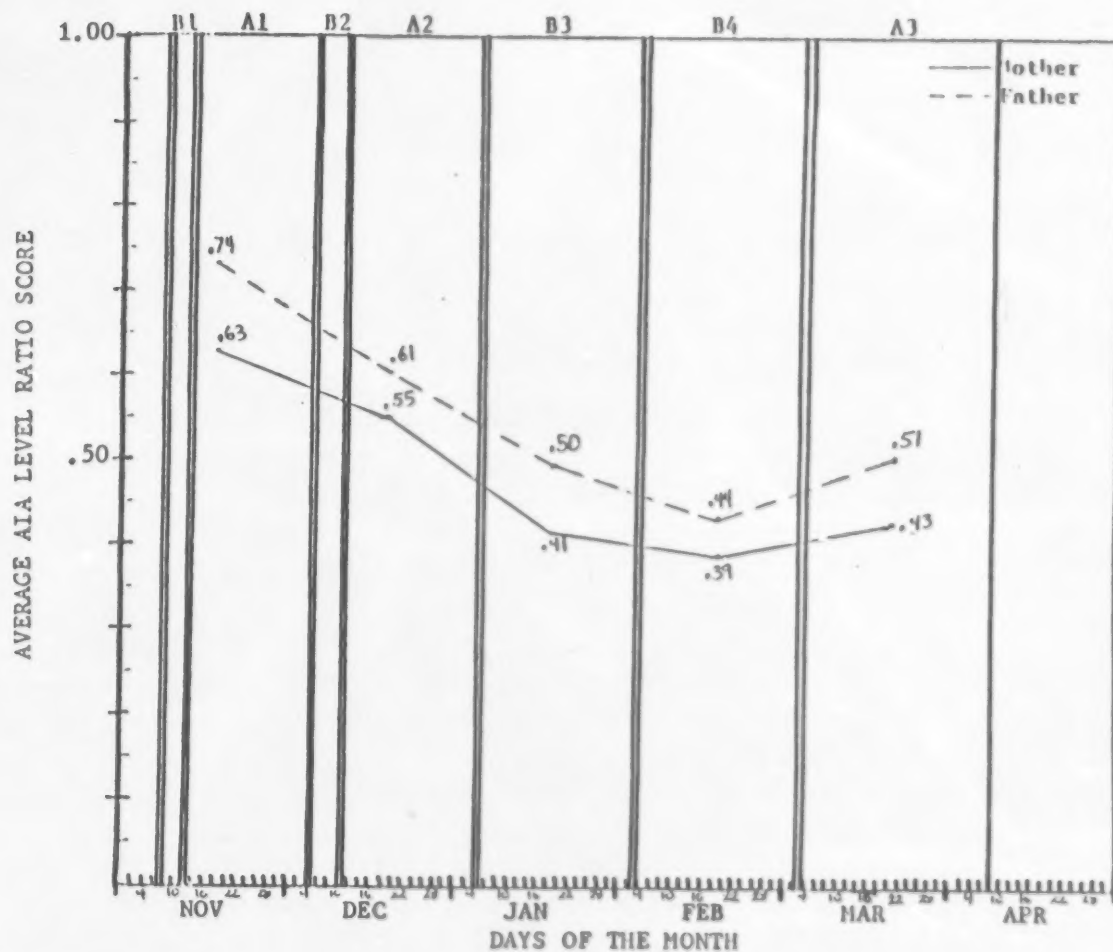


Fig. 14a. Average Allred Interaction Analysis Level Ratio Score for Grape Family Mother and Father (Average of All Ratios in a Given Subphase).

in Figure 14 indicate a downward movement towards less positive interaction (this can be seen more clearly in Figure 14a where the Level Ratio Scores in each subphase have been averaged together). This movement towards less positive interaction continues well into the B4 subphase. Finally, in the A3 subphase there is a 30% increase towards more positive interaction patterns from a low of .24 in the B4 subphase to a high of .54 in the A3 subphase. However, by the last observation that high had fallen to .49.

If it were possible to show that parent education was the variable responsible for these variations in behavior, then it would be difficult to say that it had much effect on this mother (as seen by the continual downhill movement towards increasingly negative interaction). At most it might be possible to say that this mother responded positively to her initial exposure to parent education and that she responded positively to some of the specific lectures. However, such explanations are only hypothetical.

Hypothesis six. It was originally predicted that this father would show a positive change in his pattern of interaction with family members as a result of parent education. As with the mother of this family, it is not possible to show such a relationship because of design limitations; however, even if it were possible, this hypothesis would have been rejected.

This father shows very similar behavior patterns to that of his wife. He begins at quite a positive level of interaction (.89) and ends at a much lower level (.43). Overall, that is a 46% decline from where he began. Secondly, like the mother of this

family, this father shows a great deal of variability in his behavior patterns. Each subphase is characterized by highs and lows, often with as much as a 40% difference. Close examination of Figure 14 will reveal that this father shows greater variability in his interactions than does the mother. He also shows an increasingly downhill pattern in response.

Again, if it were possible to show that parent education was the variable affecting this father's behavior, then it would be possible to state the following: this father showed an initial positive response and subsequent positive responses to specific lectures. Please note that such an explanation is purely speculative.

Peach Family

Figures 15 and 15a are graphs of the AIA Level Ratio Scores for each parent in the Peach family.

Hypothesis five. It was originally predicted that this mother would show a positive change in her pattern of interaction with family members as a result of parent education. Considering the evidence from the Peach family mother as well as the design limitations, this hypothesis was rejected. Nevertheless, there are some visible patterns in her behavior that are worth identifying.

First of all, this mother started out in the A1 subphase with a very positive level of interaction (.94). However, as seen in Figures 15 and 15a, her overall pattern of interaction is in an ever increasingly negative direction. Her final observation yields a Level Ratio Score of .42 which is 52% more negative than where she began.

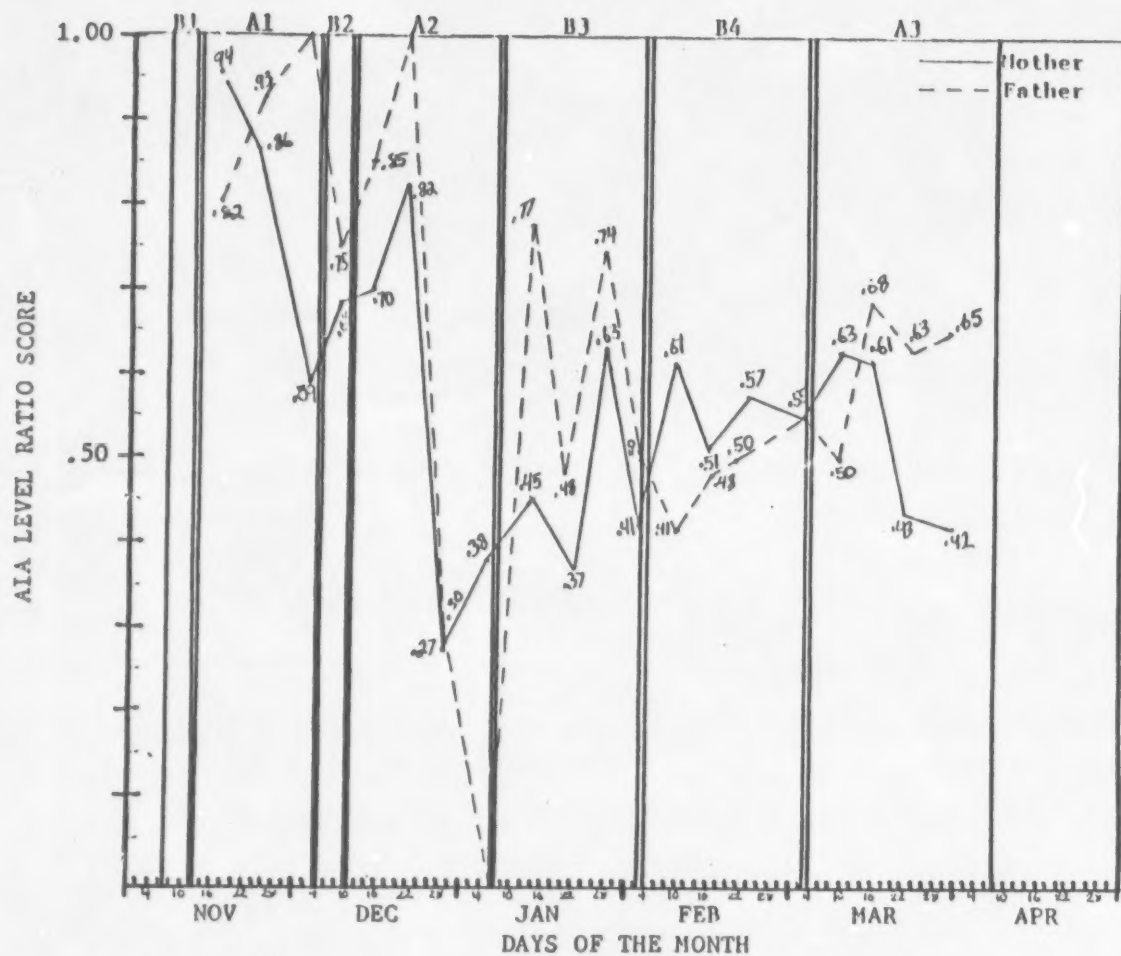


Fig. 15. Allred Interaction Analysis Level Ratio Score for Peach Family Mother and Father (Ratio of Horizontal to the Total Statements Made in a 30 Minute Session).

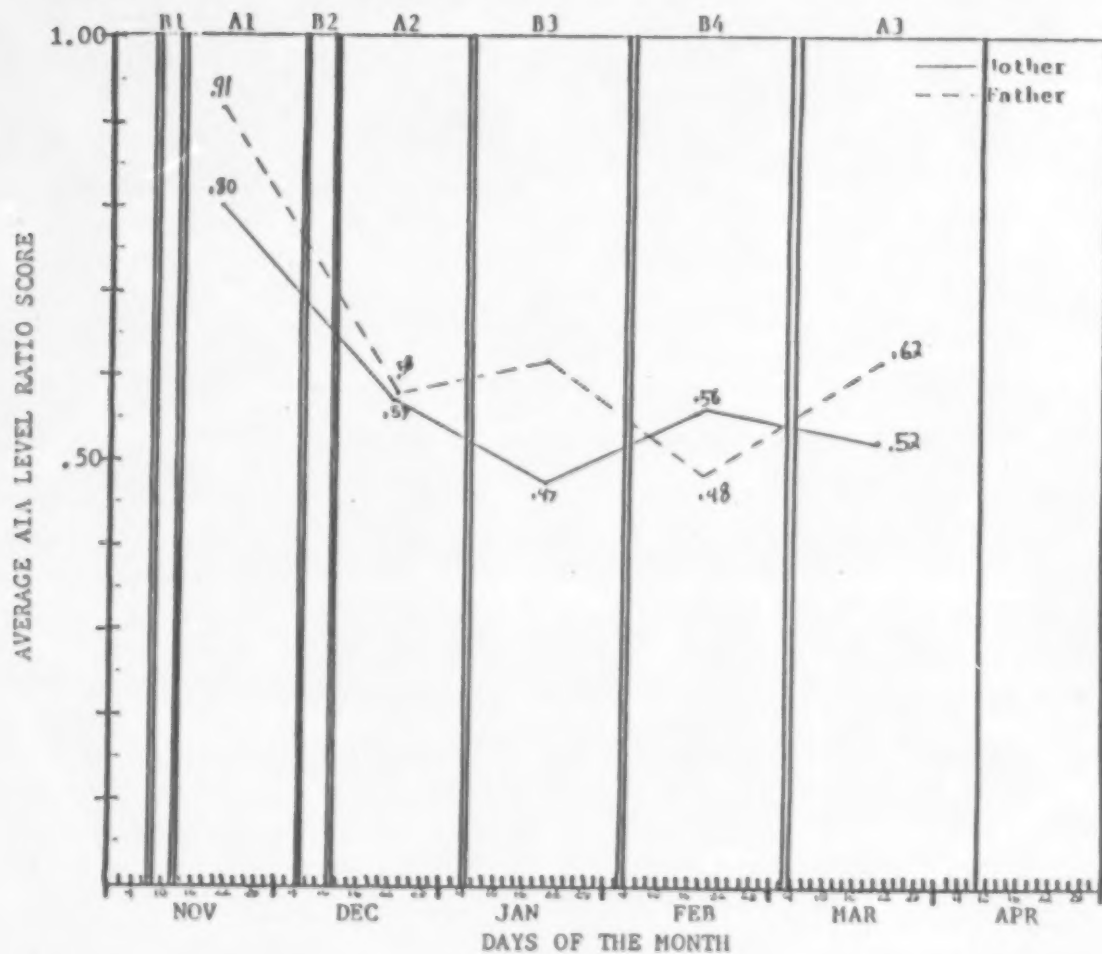


Fig. 15a. Average Allred Interaction Analysis Level Ratio Score for Peach Family Mother and Father (Average of All Ratios in a Given Subphase).

This mother also exhibits a great deal of variability in her Level Ratio Scores. A trend is now beginning to show itself. Much like the Grape parents, this mother shows highs and lows in each subphase of the study. For example, in the A2 subphase there is a 50% difference between the Level Ratio Scores of .82 and .27.

Although there could be a number of variables causing the behavior patterns observed, one cannot totally disregard parent education as a possible cause. As will be pointed out in the next chapter, there is surely a particular variable causing the similar behavior patterns noted for each family. Therefore, assuming parent education to be that variable, one might say the following: this mother began with an initial positive response and continued to respond positively to several parent education lectures. Specifically the Communication lecture (.94), the Intellectual Development lecture (.82), and the Emotional Development lecture (.27 to .63). Since this mother's interactions become increasingly negative as time goes on, then parent education (hypothetically speaking) must certainly have the potential for immediate change, but that change is temporary at best.

Hypothesis six. Similar changes in style of interaction were originally predicted for this father. There is no evidence to support such a hypothesis (regardless of design limitations) and therefore it is rejected.

This father's behavior is very similar to his wife's except his interaction behavior is generally more positive than hers. Although he does not begin with as high a Level Ratio Score, on two

occasions he reaches a perfect score of 1.0 which means that he said nothing negative whatsoever. It is possible that these Level Ratio Scores of 1.0 were in response to the first two lectures. Still, in spite of these perfect scores, his interaction pattern takes a fall in the negative direction during the same phase. In fact it falls all the way to zero which is a 100% decline or reversal in pattern of interaction. Then in the B3 subphase this father increases his interaction style to a positive Level Ratio Score of .77. From here on there are some drastic declines and increases until the end is reached with a score of .65. This high variability is typical for most of the parents in this study, and such a response indicates a 35% decline towards negative interaction for this father. It is speculated that such variability as found in this family or the Grape family is evidence of a predisposition towards negative interaction behavior.

Again, if it were possible to determine that parent education was the IV responsible for the behaviors observed in this parent, then it might be possible to say the following: that although parent education created a high initial response for this father, and several specific lectures might also have been responded to, still the effect on this father was only temporary.

Radish Family

Figures 16 and 16a are graphs of the AIA Level Ratio Scores for each parent in the Radish family.

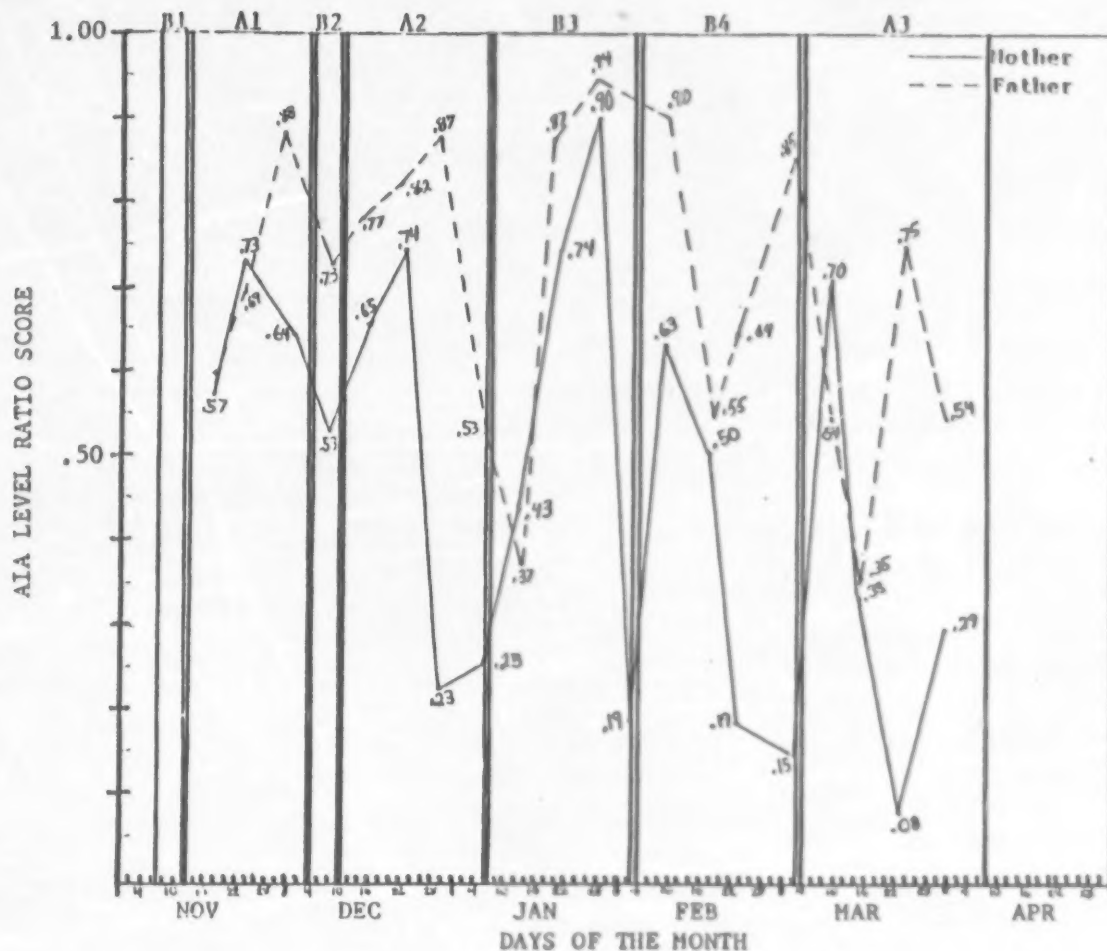


Fig. 16. Allred Interaction Analysis Level Ratio Score for Radish Family Mother and Father (Ratio of Horizontal to the Total Statements Made in a 30 Minute Session).

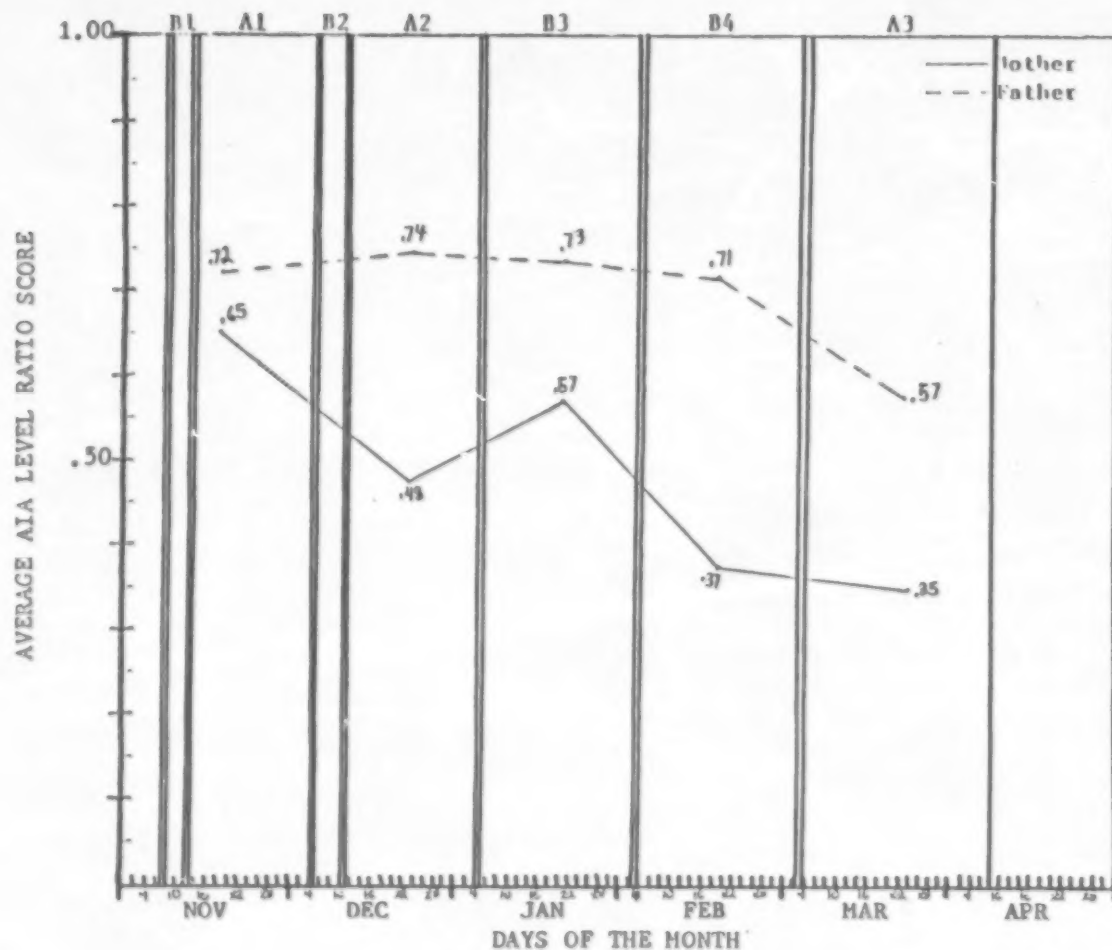


Fig. 16a. Average Allred Interaction Analysis Level Ratio Score for Radish Family Mother and Father (Average of All Ratios in a Given Subphase).

Hypothesis five. It was originally predicted that this mother would show a positive change in her patterns of interaction with family members as a result of parent education. Not only because of design limitations, but also because this mother failed to respond as predicted, this hypothesis was rejected.

This mother's behavior is very similar to the behavior of the two mothers just presented with some interesting differences. One apparent difference is that this mother does not begin with the same level of positive interaction as the mothers previously discussed. Instead she begins with a Level Ratio Score of .57 and ends with a score of .54. There is only a 3% difference in those scores. So, in spite of the tremendous variability in this mother's scores and the downhill trend in response, this mother ends with a style of interaction that is not much different from where she began. It is possible to get a better view of the overall pattern by looking at Figure 16a. Here it can be seen that the overall pattern is one of increasingly negative behavior. In other words, this mother's interactions with her family became more and more negative as time went on. For example, note the ever increasingly low scores of .23, .19, .15, and .08.

This type of variability is quite similar to the behavior of most of the parents in this study. However, this mother demonstrated greater variability than any of the other parents. Most of her subphases are characterized by extreme highs and lows with the differences being well over 50% in most cases.

If it were possible to show that parent education was the contributing variable to all this variability, then it would be possible to say that it (parent education) had no lasting effect on this mother.

Hypothesis six. It was originally predicted that the father would show a positive change in his pattern of interaction with family members as a result of parent education. Design limitations require the rejection of this hypothesis in spite of what might have been a small amount of support from this father's behavior.

Although this father begins the study only a few hundredths of a point more positive than his wife (.60 compared to .57), still it is obvious that he was generally more positive in his interactions than she. This can be best seen in Figure 16a. Nevertheless, he still maintains a downward trend towards more negative interaction. This is especially true of the B4 and A3 subphases. Furthermore, like his wife, he ends the study very close to the level where he began. His final Level Ratio Score is only 6% less positive than what he started with. In spite of the tremendous variability in his scores, that is not much of a difference.

The variability between scores exhibited by this father is still great although it is less than his wife's. Each subphase is characterized by highs and lows that are often greater than 30% apart. On several occasions there are differences as great as 50%.

With all of this in mind, one begins to wonder what could have been said for parent education. If that were the determinate IV, then it would seem to have had little effect on this father. There

might have been some positive response to specific lectures as indicated by the Level Ratio Scores of .88, .87, .94, and .90; however, such an effect was only temporary at best.

Rutabaga Family

Figures 17 and 17a are graphs of the AIA Level Ratio Scores for each parent in the Rutabaga family.

Hypothesis five. It was originally predicted that this mother would show a positive change in her pattern of interaction with family members as a result of parent education. Design limitations require a rejection of this hypothesis, in spite of evidence that might have been supportive of it. Nevertheless, it is possible to observe and analyze definite patterns in this mother's behavior.

With this mother's behavior we begin to see a break in the trends established by the preceding families that have been analyzed thus far. First of all, there is a lack of the tremendous variability in each subphase as seen with past mothers. The largest difference between any two data points is 9%. This is a far cry from the differences of 30 to 50% reported above. Secondly, this particular mother does not begin with a high Level Ratio Score and then steadily decline to a much lower one. Her pattern of interaction begins high and remains high throughout the study. In fact, there is only a 1% difference between her starting and ending points. Evidence for both of these patterns can best be seen in Figure 17a where the solid line representing mother is nearly straight.

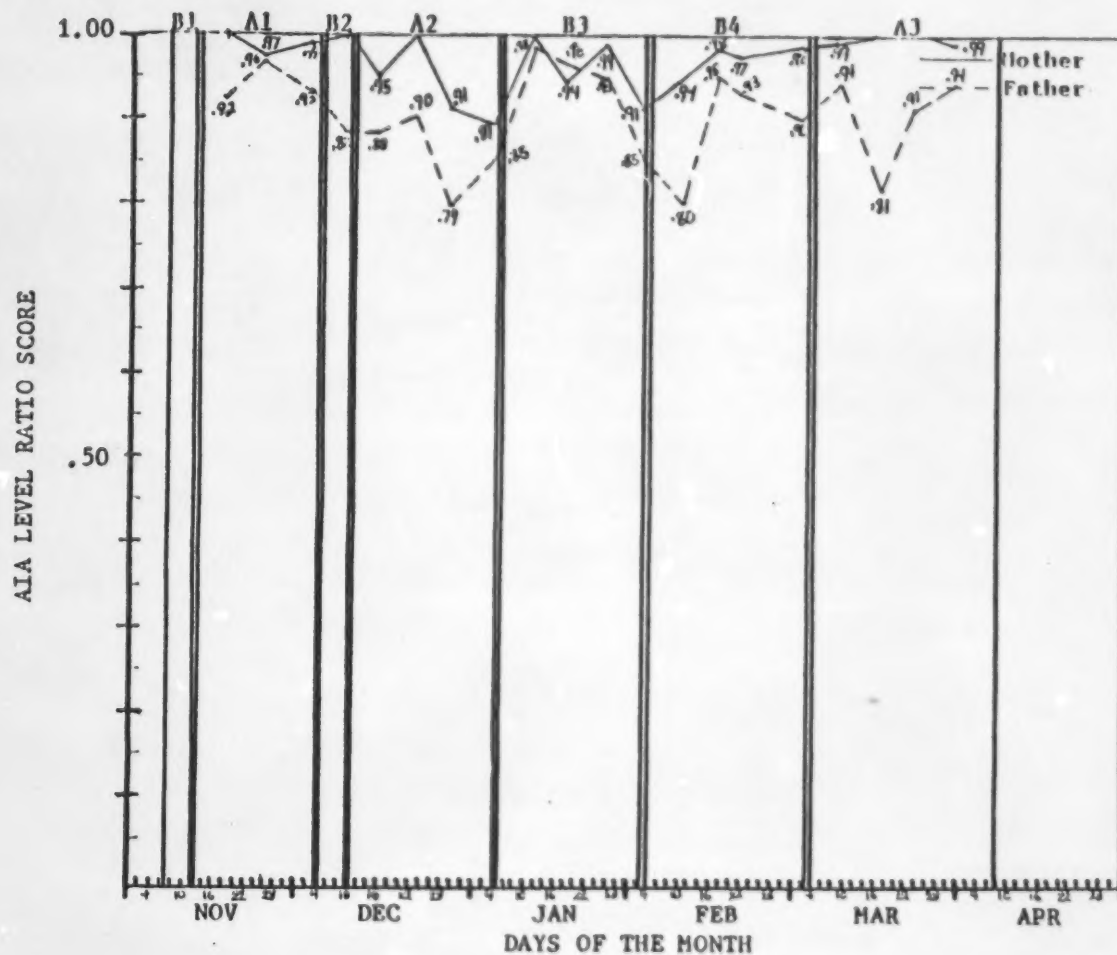


Fig. 17. Allred Interaction Analysis Level Ratio Score for Rutabaga Family Mother and Father (Ratio of Horizontal to the Total Statements Made in a 30 Minute Session).

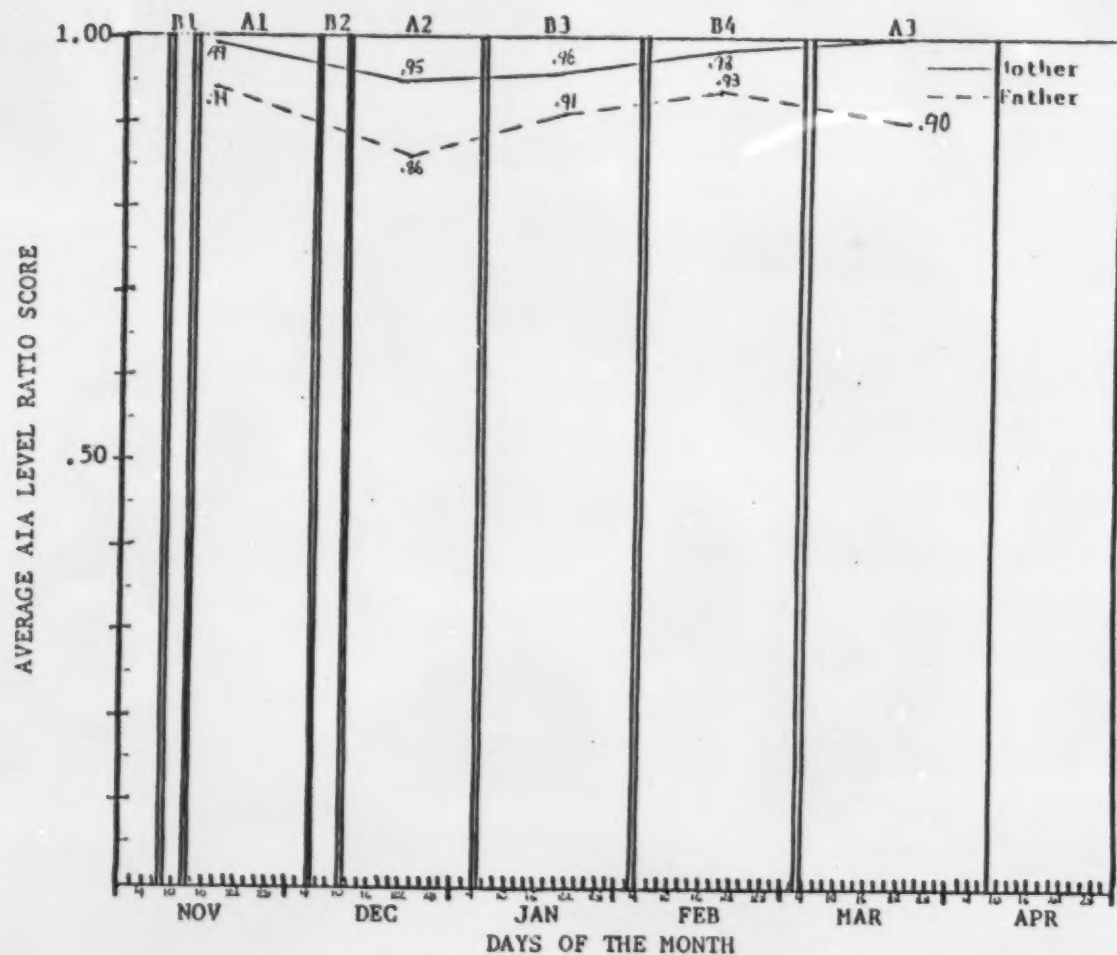


Fig. 17a. Average Allred Interaction Analysis Level Ratio Score for Rutabaga Family Mother and Father (Average of All Ratios in a Given Subphase).

If it were possible to show that parent education was the determinant variable, it would still be difficult to show that it had affected this mother's behavior. When a subject is found to score as consistently high as this one, then it is possible that a ceiling effect is present. Nevertheless, this mother does behave as predicted with behavior increases and decreases in response to the application and withdrawal of parent education. Secondly, there might be evidence for a cumulative effect in the gradual average improvement towards more positive interaction that occurs throughout subphases A2, B3, B4, and A3. Of course, all of these conclusions are offered purely hypothetically.

Hypothesis six. It was originally predicted that this father would show a positive change in his pattern of interaction with family members as a result of parent education. Again, design limitations force the rejection of this hypothesis; however, patterns similar to his wife's are evident in this father's behavior.

Although this father's behavior shows more variability than the mother's, still it is a lot less than that shown by previous parents. The greatest difference between any two data points is 15%.

Another similarity between this mother and father's response is that he ends the data collection near to the value at which he began. There is only a 2% difference between the Level Ratio Scores of .92 and .94. Again, evidence for this and the small amount of variability can be seen in Figure 17a where the broken line representing father is almost a straight line.

It is possible that this father's responses might have supported this hypothesis had the design been more stringent. However, it is important to note that his behavior responds very much as predicted with increases and decreases corresponding to the application and withdrawal of parent education (see Figure 17a). Although a number of other variables might be responsible for the observed patterns, still this hypothetical conclusion is worth noting.

Squash Family

Figures 18 and 18a are graphs of the AIA Level Ratio Scores for each parent in the Squash family.

Hypothesis five. It was originally predicted that this mother would show a positive change in her pattern of interaction with family members as a result of parent education. Design limitation requires a rejection of this hypothesis in spite of what might have been support from this mother's behavior.

As with the mother in the last family reported, this mother breaks many of the trends established in the behavior of the previous mothers reported. First of all, she does not begin with the typically high Level Ratio Score that becomes ever more negative as time goes on. Although this mother does begin with a very positive response of .94, she ends with the exact same score. In fact, on two occasions in the A2 subphase her interaction behavior reaches the perfect score of 1.0. This means that she gave absolutely no negative responses during that recorded interaction.

Another similarity between this mother and the last is her limited variability. Whereas the previous mothers have shown great

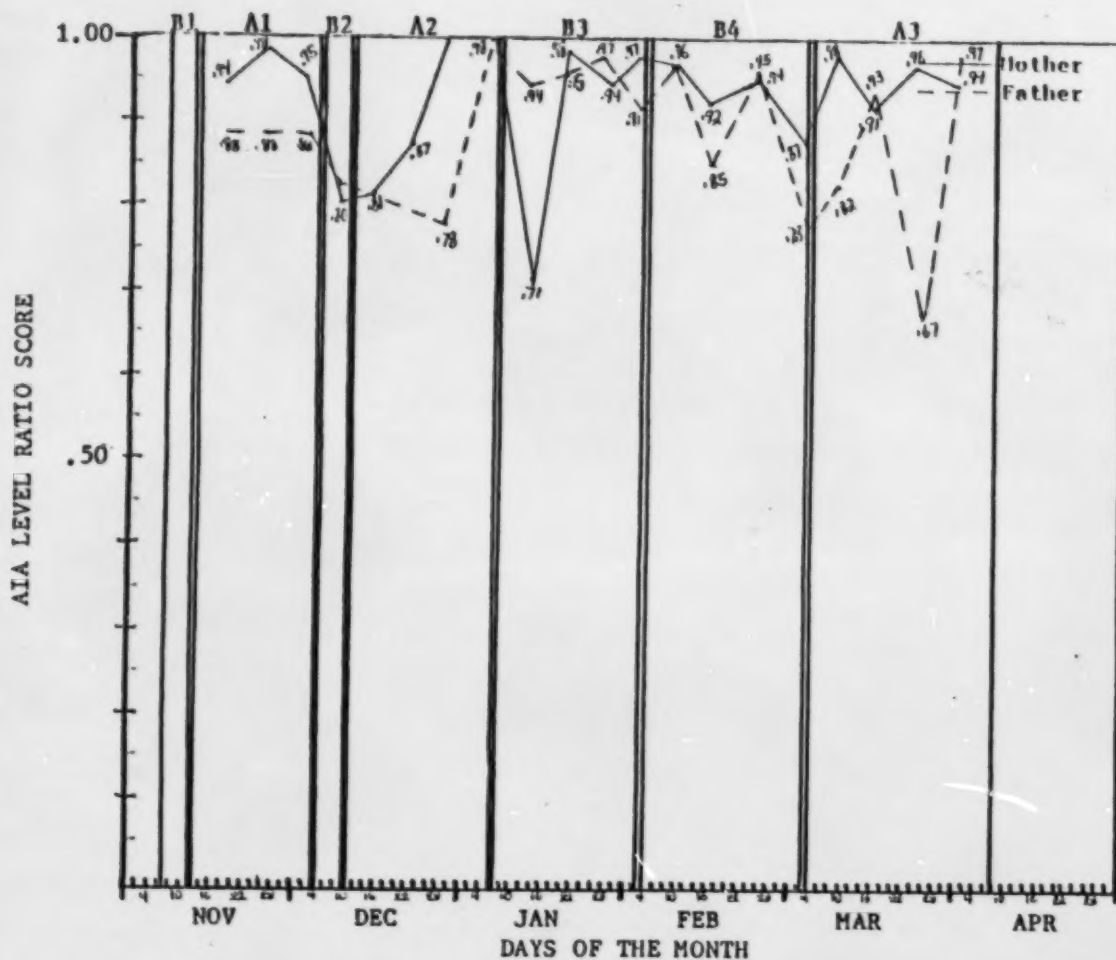


Fig. 18. Allred Interaction Analysis Level Ratio Score for Squash Family Mother and Father (Ratio of Horizontal to the Total Statements Made in a 30 Minute Session).

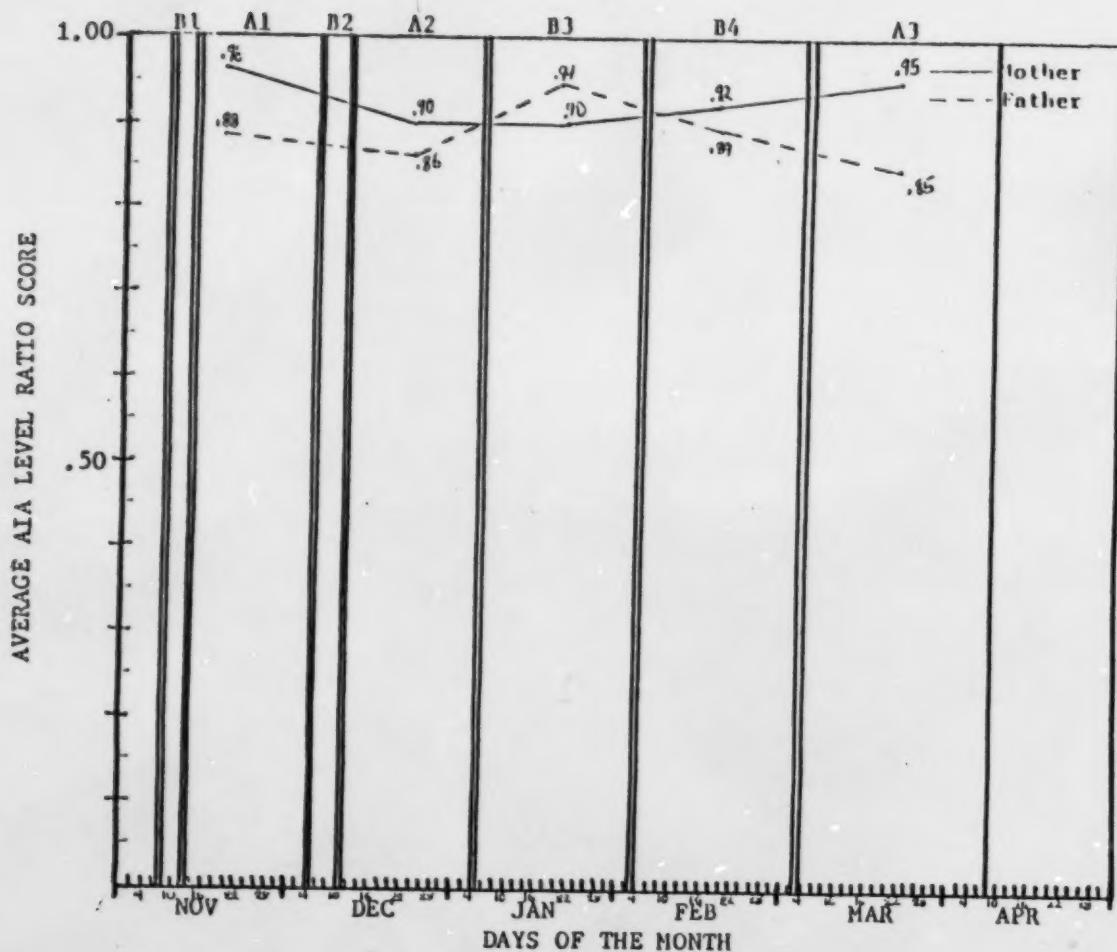


Fig. 18a. Average Allred Interaction Analysis Level Ratio Score for Squash Family Mother and Father (Average of All Ratios in a Given Subphase).

differences between high and low Level Ratio Scores, this mother's greatest difference was 15%. Little variability and high scores show a predisposition towards positive interaction. Figure 18a supports this with a nearly straight line for this mother's behavior.

Again, if parent education could be shown to be responsible for these parental behavior changes, it would still be difficult to establish that it had affected this mother. If such were the case, it would be necessary to point out the presence of a ceiling effect for this and the Rutabaga mother. It is difficult to show change or influence in behavior that is already extremely positive.

Hypothesis six. It was also originally predicted that this father would show a positive change in his pattern of interaction with family members as a result of parent education. Design limitations force the rejection of this hypothesis; however, behavior patterns can still be noted.

This father also breaks many of the trends set in the behavior patterns of previous fathers. First of all, there is no high initial response that declines continually. Secondly, he ends his involvement with a Level Ratio Score that is 9% higher than where he began. Thirdly, his variability is a lot less than other fathers even though on occasion the difference between his high and low scores approaches 30%. Last of all, this father maintains a high level of interaction throughout the study.

All of these factors combine to form a ceiling effect. If it were possible to establish parent education as the determinant

variable, the presence of this ceiling effect would still make it difficult to show the influence parent education had on this father.

Summary of Findings

Hypotheses One through Six

As explained above, all hypotheses were rejected on the grounds that: (a) no baseline exists from which to make a comparison of parental behavior before and during application of the IV, (b) too few data points exist in each subphase for the Supportive and Instructive measures. Both of these limitations make the establishment of cause and effect relationships impossible. Therefore, a description of behavioral trends for each family was offered.

Trend Analysis

Throughout the presentation and discussion of the results, some trends in parental behavior were apparent. These trends are not specifically related to any of the hypotheses and can therefore be presented. The evidence supporting these trends is enough to warrant their inclusion in this chapter.

1. One such trend could be termed the "Big Bang." Somewhat like the current theory concerning the origin of the universe, response to the study started for many parents with quite a bang. It is probably most apparent in the instructive behaviors and interaction analysis, but many of the mothers in the supportive behaviors measure gave evidence of a Big Bang effect as well.

2. Another trend in parent behavior worth noting is the cumulative effect on the parents in this study. Even after the Big Bang in the BAB phase has faded out, many parents begin a steady climb back towards the higher levels of interacting. This effect can best be seen in the B3 and B4 subphases of the ABBA phase. The extended B3 and B4 subphases were designed explicitly to detect such an effect. This effect is most visible in the supportive and instructive measures. Evidence would indicate that the steady growth in the B3 and B4 subphases is maintained longer than the initial or Big Bang changes were.

The inverse seems to be true for the analysis of family interaction patterns. Most of the families in the interaction analysis experienced a downhill trend towards negative or vertical interaction as time went on. Of course fathers in the supportive behaviors measure did not respond with a cumulative effect either.

3. Another further trend that relates to the Big Bang and Cumulative trends was that for most of the parents involved, the positive effects on their behavior were only temporary. It has already been pointed out that most initial changes caused by any Big Bang effect were temporary at best. Even the cumulative effects which were observed during the ABBA phase of the program were non-lasting. This is true especially for the instructive and interactional measure. In the supportive measure, most of the mothers gave evidence of some permanent behavioral changes. However, fathers in the supportive measure did not respond at all.

4. All of the trends thus far identified in this section, except the ones identified as involving a Big Bang or being only

temporary, have been most easily observed in the supportive and instructive measures. As pointed out previously, most of the parents exhibited increasingly negative or vertical interaction, and the overall trend was downhill for the interaction analysis. Only two families showed a positive response with an increase in horizontal behavior that was similar to those exhibited for the supportive and instructive behaviors.

5. There seems to be a great deal of difference in the way each gender responded to the supportive and instructive measures. Mothers seem to be very supportive, while fathers are not. Fathers seem to be more instructive, while mothers are not.

One possible explanation for this almost universal lack of paternal supportive behavior can be found in the work of Nash (1965). He has suggested several sociological reasons for lack of father involvement. One of them was a cultural assumption that child-rearing is a feminine duty. From this study it seems quite possible that father has indeed adopted this belief about his role. Furthermore, he seems to have made a distinction between supportive and instructive behaviors. On the one hand, supportive (or nurturing) behaviors are considered feminine; and on the other hand, instructive behaviors are masculine. Something about the "macho" image leaves no room for nurturing behavior. Very seldom did the fathers in this study exhibit the more nurturing kinds of supportive behaviors that required physical and verbal expressions of affection. Fathers exhibited much more instructive behavior towards their child in the task situation.

It is worthy of note that Hyde (1976) found similar evidence to support this finding. He reported that often fathers refrained from interacting with their sons in activities that were creative or arty. However, the fathers did interact with their daughters in the same activities, suggesting that the fathers may have felt the activities were "alright for girls but not for boys" (p. 46).

One very interesting point that relates to this discussion was the finding that during the dinner time interactions, fathers and mothers had very similar patterns of interaction with father often more horizontal than mother. In most cases the father's percentage of horizontal statements was substantially higher than mother's. A possible explanation for this phenomenon that will not contradict the findings just discussed may have something more to do with the parental roles of homemaker and bread-winner. It might simply be that after chasing the kids around the house all day, mother is tired, even at the end of her rope, where, on the other hand, father has been away from the children all day. He comes home from work anxious to see his children and happy to leave the job for another day. Mother's role provides no release such as this through change of circumstances. Her job continues through the meal preparation, dinner, and on into the evening. This speculation would require documentation, but it is an example of additional research questions which could be pursued.

6. It is also important to note that for the interaction analysis a tremendous amount of variability was found in each parent's pattern of interaction. At this point there seems to be no

explanation for such behavior. Nevertheless, the strength of the trend requires its notation. This variability was common for all parents except the last two families who maintained high Level Ratio Scores throughout the study.

CHAPTER 4

SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The intent of this study was to analyze trends in parental behavior in response to the application and withdrawal of a parent education program. It was felt that this could best be accomplished by actual measurement of parental behavior in the home. Therefore, this study measured several specific parental behaviors: supportive behaviors, instructive behaviors, and patterns of family interaction. These behaviors were measured weekly and monthly to facilitate the trend analysis. This study is, in effect, an exploratory study.

Hypotheses

Originally, two major questions were asked in this study. Although a lack of sufficient data points and no baseline rendered such questions unanswerable, they are included as the rationale for attempting such a study in the first place. The original intent was to ask the following questions: first, can a parent education program effect change by increasing parental supportive and instructive behaviors? In other words, can parents learn to be more nurturing and emotionally supportive of their children, and can they learn to be better teachers of their children? Second, can a parent education program effect change in the pattern of family interaction? That is, can a parent learn to communicate more positively? More

specifically, does the learning of selected concepts in child development have any effect on actual parental behavior?

Six hypotheses were also proposed in the initial attempt to answer these questions. Since data collection procedures undermined the goal of the research design, the hypotheses are included here just as a background for the trend analysis, and for future researchers.

1. As a result of parent education, the mother will increase her supportive behaviors towards her child.

2. As a result of parent education, the father will increase his supportive behaviors towards his child.

3. As a result of parent education, the mother will increase her instructive behaviors towards her child.

4. As a result of parent education, the father will increase his instructive behaviors towards his child.

5. As a result of parent education, the mother will show a positive change in her pattern of interaction with family members.

6. As a result of parent education, the father will show a positive change in his pattern of interaction with family members.

Methods

A single case experimental design was replicated six times. Specifically, a BAB-ABBA design was implemented. In this design the B subphases represent the treatment program or the independent (IV), and the A subphases represent a "withdrawal" or no treatment phase. These distinctions were true for both the BAB and the ABBA phases of the study.

Several alterations took place in the original design of this study. This study was originally conceived as an ABA design in which the A phase was to have been a baseline measure of parental behavior and the B phase a treatment phase. The original plan also included an extension of the B phase into a B1, B2, and B3 phase representing different types of intervention. Bad weather prevented the taking of a baseline measure, and the different B phases were dropped because of a lack of experimental control over them. Nevertheless, an attempt was made to show cause and effect in spite of the missing baseline and B phase problems. Utilizing the great flexibility of single case designs, on the spot changes were made resulting in a BAB-ABBA design. In effect this was a BAB-ABA or reversal design. The BAB, as Hersen and Barlow (1977) indicate, emphasizes the treatment's effect. In this study the ABA phase was a reversal of the BAB and contained a double or extended B phase in order to assess the cumulative effects of parent education. In essence, the A subphases of the overall BAB-ABBA design might more accurately be termed "C" subphases because they do not represent a true withdrawal phase. (Once an idea has been introduced, how do you "withdraw" it from those who learned it?) The distinguishing feature of the B subphases was the monthly presentation of a parent education lecture. It was hoped, through these revisions, that an assessment of a cause and effect relationship between parent education and the parental behaviors measured would still be possible. However, because of a missing data point in the A1 subphase, and because of an insufficient number of data points available for cause and effect in the supportive and instructive measures to be assessed, the ability

to test hypotheses in a cause and effect fashion was flawed. These two problems were detected after data collection when, of course, nothing could be done to correct them. Therefore, an analysis of behavioral trends, rather than an assessment of cause and effect, was the focus of this study.

The families were chosen by invitation from among parents participating in the Carbon County, Utah parent education program. Since each family served as its own control, and generalization would only be made to similar subjects, it was not necessary to employ randomization techniques in the selection of these families. When families serve as their own controls, the problems of interpreting data from volunteer populations are minimized. Each family can be compared to its own previous performance, according to the data. With that in mind, subjects were chosen on the grounds of willingness to commit to extra data collection. Of the original eleven families that were recruited, two refused to participate in the extra data collection, one was prevented by unexpected circumstances, and two more were dropped because of failure to keep appointments and records. The remaining six families were reported in Chapter 3.

The following procedures were followed in implementing the design. First of all, families were selected for the study, and the parent education program began. This program consisted of monthly lectures given by the kindergarten teacher. These lectures were supplemented by tapes, readings, and home activities. There were five lectures, including: "Why Parents Should Teach,"

"Communication," "Intellectual Development," "Emotional Development," and "Social Development." It should be noted that the first lecture contained no specific parenting principles or skills. Secondly, the families were asked to participate in a number of activities as part of the data collection. These activities included monthly, weekly, and daily measures of parental behavior. Third, the specific steps of the study, as outlined in Chapter 2, were implemented. Then the treatment program was systematically presented and withdrawn while parental behaviors were observed to detect change.

Three behaviors, or dependent variables (DV), were measured in the home to ascertain change in parental behavior. Two of the dependent variables measured were parental supportive and instructive behaviors. These were defined (Larsen, 1972) and measured by asking the parents to assist their child to succeed in a given task. Supportive behaviors were classified more specifically as supportive facial, supportive verbal, supportive physical proximity, supportive physical contact; and instructive behaviors were categorized as verbal instructive and physical demonstrative. The other dependent variable was the pattern of interaction with family members. This was defined as horizontal or vertical interaction and was measured by coding weekly tape recordings of family dinner times using the Allred Interaction Analysis (Allred, 1976). By vertical is meant behavior which is generally negative or unproductive, and by horizontal is meant behavior which is positive relationship building.

The data received from these measures were analyzed in the following manner: each subject's data on the dependent variables

were plotted against the presentation of the independent variable. More specifically, each family's data for the dependent variables of supportive behaviors, instructive behaviors, and pattern of interaction were plotted against the presentation and withdrawal of the parent education lecture. Since no true hypotheses were testable because of the missing data points and baseline, only long term trends in behavior and cumulative effects were reported. The criterion used in reporting these trends lies in the pattern of behavior established in any previous subphase. For example, in the ABBA phase of the study, supportive behaviors, instructive behaviors, and patterns of interaction were observed. After application of the treatment, a change in behavior should be observed. The conclusions drawn in this study were dependent on such changes in the pattern of behaviors, and the identification of such intrafamily behavior patterns made it possible to identify and analyze interfamily trends. For example, if two or more families were to show a downward pattern in a particular subphase, then a trend would have been documented. In this study, the following trends in supportive and in instructive behaviors were noted.

Overall, mothers were found to have responded with increased supportive behaviors whereas fathers did not. The fathers in this study seemed to uphold the traditional belief that nurturing behavior is feminine and therefore remained unsupportive. As far as instructive behaviors are concerned, the trends are similar. The mothers were more affected than the fathers. Both parents increased their instructive behaviors; however, the mothers showed a greater increase.

Very few of the parents gave any evidence of a lasting effect on their behavior, although there was evidence of a cumulative effect during the extended B subphases. In other words, if parent education was a cause of these behaviors, at best it had only a temporary effect on parental supportive and instructive behaviors.

Concerning the analysis of family interaction, the trends are very similar for mothers and fathers. The majority of both parents evidenced increasingly negative responses. Although it is possible that they responded to specific lectures with increased horizontal interaction, still their behavior became increasingly negative or vertical as time went on. There was no lasting effect on parental patterns of interaction with family members.

Other findings were found which have implications for future research. For example, it was discovered that, for many parents, response to the study started with a "Big Bang." That is, the initial involvement had quite a motivating effect on parental behavior, but in spite of this "head start," most of the parents' behavior faded out to the zero level. Still, there is another trend present that involves a cumulative effect. Often, even after fading out, the continued involvement would begin to take effect, and parental behavior could be seen to rise. Sometimes the behavior would rise tremendously; however, for many of the parents the behavioral changes were only temporary, and after the program's end their behavior would again fall to the zero level.

It was also noted that fathers did not respond with an increase in supportive behaviors. In fact, they did not respond at all. The

explanation was offered that the lack of involvement was due to a cultural belief that child rearing is a feminine duty. It was also noted that fathers were generally more horizontal in their interactions with family members.

Finally, it should be pointed out that for the interaction measure, there was evidence of a great amount of variability in each parent's behavior patterns. This tremendous variability was noted in the behavior of all parents except for two families who were reported to have suffered a ceiling effect.

Conclusions

As noted previously, data collection procedures were inadequate for the testing of the hypotheses. Therefore, no conclusions were drawn in regard to parent education as the determinant variable affecting parental supportive behavior, instructive behavior, and patterns of interaction.

However, in spite of the inability to show cause and effect, there is still evidence to implicate parent education as related to family behavior. The one thing all of these families had in common (and single case designs allow this observation) was parent education. Therefore, it is possible that parent education was the common variable behind the trends that have just been presented. For this reason alone, future research should be undertaken to ascertain if such a speculation is factual.

Other Conclusions

In Chapter 3, findings other than those specifically related to the hypotheses were reported. From that analysis of trends, the following conclusions are presented:

1. There was a strong, immediate effect on all of the parental behavior studied that could be termed the "Big Bang."
2. There was evidence of a cumulative or build-up effect on parental supportive and instructive behavior.
3. In spite of this cumulative effect, there was only a temporary effect on the parents involved.
4. In the interaction analysis there was evidence of ever increasingly negative communication for most of the families as the study progressed.
5. There seems to be a difference in the way each gender responds to the measures taken. Mothers seem to be more supportive than fathers, and fathers seem to be more instructive and communicate more positively.
6. There was also evidence of tremendous variability for each parent's pattern of interaction characterized by very positive scores one week and then a very low or negative score the following week.

Limitations

The ability to generalize these conclusions to other parents of preschool children is limited by the scope of this study. Hersen and Barlow (1977) explain that the base for generalization to other

subjects is increased by repeating the experiment several times. This is called direct replication, and the six families whose results are reported in this study represent the six replications of this design.

Direct replication controls for both internal and external validity. This was explained fully in Chapter 2, but is reviewed here for the purposes of explaining the limitations. Replication on different subjects can increase internal validity because it strengthens the findings across subjects. Internal validity can be defined as the ability to isolate the IV as the cause of the changes in the DV. Therefore, the greater the number of subjects that respond in a similar manner, the greater the ability to isolate the IV. In spite of this study's missing baseline and data points, such similarity was observed, and therefore the trends reported have strength. They are of insufficient strength to isolate the IV, but it is possible to offer some "hint" about the role of parent education in influencing parents.

Replication across different subjects also strengthens external validity, which is the ability to generalize to other subjects. For example, in group comparison studies, homogeneity of subjects is required for generalization and is often controlled for to make such generalization possible. Single case experiments are concerned with homogeneity too, but in the applied setting it can be a difficult thing to achieve. Therefore, when similar results are found for homogeneous subjects, excellent evidence for external validity has been obtained. However, when results are similar

across non-homogeneous subjects, then external validity is increased to a maximum. Again, the similarity observed across subjects in this study lends strength to the subsequent trend analysis and the possibility of parent education being an important IV.

In light of this, a single case design is limited only in that it cannot be generalized to different locations, school systems, kindergarten teachers, lecture topics, etc. Generalization to similar subjects, however, should be highly valid, depending on the nature of other limitations of the study in question.

Hersen and Barlow (1977) suggest this problem of achieving generalizability by the use of systematic replication. They define this as the replication of a direct replication study with different settings, behavior problems, behavior change agents, and of course subjects. The results of such systematic replication would serve to further increase external validity. Generalization to subjects across settings would then be possible.

A further limitation of this study is related to the careful application and withdrawal of the IV as well as the careful measurement of the DV's. It has previously been explained that this study is limited in its ability to show cause and effect relationships, due primarily to flaws in data collection procedures. Consequently, only the similarity in behavior patterns observed across families was reported. In this reporting, generalization across subjects is limited by the accuracy of these behavioral measures.

Recommendations

Lazarus and Davidson (Hersen & Barlow, 1977) have said, concerning the role of single case experimental designs, "One of the more important functions of the case study is the generation of new hypotheses, which later may be subjected to more rigorous experimental scrutiny" (p. 24).

It is recommended that direct and systematic replications of this study be performed to further the understanding of the relationship that exists between parent education and parental behavior in the home. Further information needs to be gained concerning father's involvement. For example, why do fathers remain relatively uninvolved? Why are they more typically horizontal in their interactions, and why do they fail to respond as quickly and intensely in the supportive and instructive measures? Questions need to be answered concerning the temporary nature of the effects on parents, especially with regard to the "Big Bang" and cumulative effects that ought to have had more of an impact than they did. For example, it might be beneficial to know how the "Big Bang" of initial change could be maintained and how the phenomenon could be repeated throughout a program's duration to ensure continued involvement.

Questions like these and many others are waiting for answers. Therefore, it is recommended that replications of this study be performed with the following improvements in design. This would ensure greater validity.

1. The first and most important change would be to add a baseline measure to the beginning of the program. That would change

the design to an ABAB-ABBA and add strength to the results by providing a picture of what parental behavior for the DV's is like prior to involvement in parent education. A baseline also increases the ability of each subject to serve as its own control. Furthermore, a baseline would give a clearer picture of any influence that resulted from the introductory lecture. Although it was assumed that merely gathering together to hand out forms and tape recorders could have little effect, the introductory lecture could have resulted in the Big Bang effect.

2. A baseline measure would also clarify if the Big Bang is the result of the presence of observers in the home (supportive and instructive measures) or the result of a tape recorder being on (Allred Interaction Analysis). As it stands, any of these factors could be important.

3. There is a need for more frequent observation of supportive and instructive behaviors. For example, no observation exists in the A1 subphase except where families were inaccessible during the B1 subphase, and so their observation was rescheduled. This lack of a measure makes it impossible to test hypotheses in the BAB phase of the study because there was no way to tell if the target behavior was rising or falling in that withdrawal subphase.

4. Another reason for more frequent observations of supportive and instructive behaviors is that more control is needed over the experiment. Single case designs were initially developed for use in situations where the subject was under continuous laboratory control conditions. In this study, subjects were frequently out of

the experimenter's control and subject to many diverse influences for long periods of time. This could very easily affect the results of the study, and without additional observations it is impossible to know what was happening to parental behavior. For example, the Christmas and New Year's holiday seems to have put a damper on parent behavior. In many cases there is a definite drop in supportive and instructive behavior prior to the holidays which is seen to rise a week or so later. However, it is impossible to be sure if the holiday is responsible for the behavior change without observations during that time period. In the Allred Interaction Analysis, which was measured weekly, it is possible to see a drop in horizontal behavior (perhaps due to the preparations) just prior to the Christmas holiday. A week later, during the Christmas holiday, a substantial increase in horizontal behavior can be seen. It would seem that Christmas had an effect on the patterns of interaction between family members.

5. In this particular study, infrequent observations were almost a necessity. Supportive and instructive observation was done monthly because of the 80 miles required to travel from Provo, Utah to Price, Utah. Time and expense prevented the observers from traveling to Price more often, not to mention bad snowstorms that closed the mountain pass. Therefore it is also recommended that observers be hired who live near the target families.

6. The observers coding the tapes of the dinner hours could insure the accuracy of their coding by meeting frequently to re-establish their reliability. This would only require a few minutes

to see if their individual coding was still above the 80% level of agreement. This is a recommendation of Allred which double checks the maintenance of reliability throughout the study.

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Rater Reliability and the AIA

The measurement of vertical and horizontal behaviors was accomplished through the use of tape-recorded dinner time interactions. These dinner time recordings were 30 minutes long. All tapes were coded at 5 second intervals by trained raters who achieved an inter-rater reliability of 80% or higher. Allred (1976) gives the following formula for establishing a reliability coefficient:

$$\text{Reliability} = \frac{A}{A + D}$$

with A representing the tallies in agreement and D representing those in disagreement.

The procedures for establishing the reliability coefficient are as follows: First, the total number of tallies were determined for one parent for each category from the two tally sheets of the observers (see Revised AIA Tally Sheet, page 130). The same procedure was followed for the other parent. Second, the agreements and disagreements for each category were identified and listed on a separate piece of paper. Third, this procedure was followed for each category, and the totals were substituted in the formula. Finally, the reliability coefficient was calculated.

The above procedure was followed as outlined except that the coefficient was multiplied by 100, yielding a percent of agreement. Therefore:

$$\frac{A}{A + D} \times 100 = \% \text{ of agreement.}$$

Revised AIA Tally Sheet

AIA TALLY SHEET
(revised)

Name _____
Date _____
Comments _____

CATEGORIES		Husband	Wife	Other
LEVEL COMMUNICATION	1. Voicing observations			
	2. Seeking to understand			
	3. Discusses alternatives Commits			
	4. Gives support			
	5. Disclosing feelings			
VERTICAL COMMUNICATION	6. Seeking			
	7. Bossing or punishing			
	8. Creating or maintaining distance			
	9. Surrendering			
MISCELLANEOUS		Confusion		Silence
10.				

Validity of the AIA

Allred (1976) reports the following information on the validity of his interaction analysis. Content validity was determined by marriage and family educators who evaluated the categories of the instrument (see Allred's Interaction Analysis (AIA), page 132). Allred reports these educators as agreeing that the content was consistent.

Allred further reports the results of a factorial validity study as showing strong evidence that categories 6, 7, and 9 (see Allred Interaction Analysis) group together and separate themselves from categories 1 through 5, plus 8. Although categories 1 through 5 do not group together, the evidence that they separate from 6, 7, and 9 gives assurance of their status as functional categories.

In terms of concurrent validity, Allred (1979, 1980) reports the results of an experiment which tested the AIA as a tool for assessing style of interaction in dyadic relationships. In order to test the AIA for concurrent validity, dyads were tested on four dependent variable measures. Two of these were similar communication tests, and the other two were the AIA Talk Dominance Score, and the AIA Level Ratio Score. Allred reports that the consistency of the posttest gain scores for the two communication tests and the level ratio score of the AIA provide evidence for concurrent validity.

Allred's Interaction Analysis (AIA)*

Level of Communication

- | | |
|---|--|
| 1. Voices
Observations: | Reveals ideas concerning self, other(s), the relationship, events, places; expresses observations; gives facts and opinions; asks rhetorical questions; answers other person's questions; gives feedback |
| 2. Seeks
Meaning: | Asks questions; seeks to understand or clarify; asks for a response to accuracy of his or her perception; hypothesizes or guesses about meanings (may misunderstand, but works respectfully to understand) |
| 3. Discusses
Alternatives/
Commits: | Discusses/questions alternatives; explores/questions their advantages and/or disadvantages; negotiates; agrees, consents; commits self to a decision (influences, using democratic methods) |
| 4. Gives
Support: | Says such things as "please go on"; praises; makes encouraging statements; identifies; recalls and/or predicts other's feelings; accepts other's feelings; makes empathic statements; paraphrases other's feelings or thoughts |
| 5. Discloses
Emotions: | Reveals own feelings concerning self, other(s), the relationship, things, events or places; discloses negative feelings in a courteous manner |

Vertical Communication

- | | |
|---------------------------|--|
| 6. Solicits
Attention: | Monopolizes the conversation; interrupts; overtalks; talks with little or no request for feedback; competes for focus of attention; draws attention to self at the expense |
|---------------------------|--|

*From How to Strengthen Your Marriage and Family by G. Hugh Allred (Provo, Utah: Brigham Young University Press, 1976).

of the other person(s); brags; parades self; seeks service from others, seeks approval, or to please.

7. Bosses/
Punishes:

Bosses; Lectures, preaches, orders; makes intrusive statements; talks down to other person(s); fights to/for control; justifies self; talks angrily; whines; cries, complains of being ill; uses autocratic methods to control the other person(s). Punishes; belittles, demeans, blames; uses fault-finding, sarcasm, ridicule

8. Creates/
Maintains
Distance:

Talks in an aloof, disinterested manner; wanders in verbal expression; talks continuously or incongruently; uses humor that creates distance; ignores feelings; intellectualizes; talks like a robot; agrees automatically with little or no assertion of self; talks evasively; avoids closeness

9. Surrenders:

Gives in; abandons own wants, wishes, and desires (often as a result of another person's vertical behavior, as classified in category 7); gives up

Miscellaneous

10. Silence/
Confusion

Silence; more than one talking at one time

Rater Reliability of the Supportive/Instructive
Behaviors Checklist

The measurement of supportive and instructive behaviors was accomplished through observer ratings of 10 minute sessions of parental behavior. Parental behavior was rated in 15 second intervals by trained observers who had achieved an inter-rater reliability of 80% or higher. Training included viewing videotaped and live examples of teaching behavior and then rating the teacher behavior until agreement reached 80% or higher. Larsen (1975) gives the following formula for establishing the percent of reliability or agreement,

Reliability of the rating was determined by the number of intervals in which two observers agreed (A) that a supportive or instructive behavior had occurred (see Revised Supportive/Instructive Behaviors Check List) divided by the number agreed (A) plus disagreed (D) (only one observer recorded a behavior), times 100:

$$\frac{A}{A + D} \times 100 = \% \text{ of reliability (p. 633).}$$

Validity of the Supportive/Instructive
Behaviors Check List

Although evidence for content validity of this measure is scant, Larsen (1975) reports substantial evidence for "observation validity." In this study, Larsen trained teachers in supportive and instructive behaviors. She then had them teach preschool children to skip and conserve substance. Her findings suggest that preschool children benefit significantly from such teacher training. The reliability checks in this study yielded high percentages of agreement for each pair of observers. For each specific behavior (see Revised Supportive/Instructive Behaviors Check List, p. 137) the percentages of agreement were consistently above 80%. The overall average percent of agreement was 91%. Although Larsen feels this to be high, due to infrequent occurrence of behaviors, still it gives evidence that the check list measures what it was intended to measure.

Further evidence of the validity of this measure can be found in the study by Gibson (1979). For the most part, this study was a replication of Larsen's (1975) effort to ascertain the effects of increased teacher support on the learning of young children. In addition to the check list, Gibson further rated each teacher on a subjective evaluation for supportive and instructive behaviors. He found a high correlation between the observational ratings and the subjective evaluation for these behaviors.

Revised Supportive/Instructive Behaviors Check List

Mark:

Subject _____ Rater _____ Date _____

Supportive Behaviors:

Physical Proximity
When teacher is down kneeling, sitting, or bending so eye level difference between teacher and child not more than 8 or 10 inches, and near within touching range (not more than 2 feet away) of nearest child.

Supportive facial
When teacher smiles, nods, winks, makes direct eye contact, grins, chuckles, or laughs.

Supportive Verbal
For any praise, statements of affection, acceptance, or exclamations of approval.

Physical Contact
For any touching, patting, or holding, embracing, squeezing, etc.

Simultaneous Support (SS) =
Three or more supportive behaviors occurring simultaneously.

Instructive Behavior:

Verbal Instruction
For all acts of singing, telling how, giving information, asking questions, giving directions, etc.

Physical Demonstration
When demonstrating or showing how to, manipulating materials or holding and showing objects.

Simultaneous Instructive (SI) =
Two instructive behaviors occurring simultaneously.

	1 min.				2 min.				3 min.				4 min.				5 min.			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prox																				
Face																				
Verb																				
Cont																				
Verb																				
Demo																				

	6 min.				7 min.				8 min.				9 min.				10 min.			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P																				
F																				
V																				
C																				
VI																				
D																				

Totals: Prox _____ Face _____ Verb _____ Cont _____
 SS _____ Verb Inst _____ Demo _____ SI _____

List of Tasks Used in Observations of Supportive
and Instructive Behavior

1. BEAN BAG TOSS - Each child was given six bean bags, approximately 4 inches square and instructed to toss them into a large metal wastepaper basket from six feet away. The child was allowed as many tries as possible until he could successfully throw six in a row. If the child was successful on his first try, then he was consistently moved back three more feet. This was to allow sufficient time to observe the parents.

2. PARQUETRY BLOCKS - Each child was given a 10 inch square box of 3/4 inch high blocks. The blocks were in various geometric shapes and of varying colors. Included with the blocks were six pictures of designs that could be made with the blocks. These six designs increased in difficulty. Each child was handed the blocks, loosely piled in the box, and told to try and make as many of the designs as possible.

3. BARRELS OF FUN - Each child was given two sets of colorful barrels. The barrels consisted of ever-increasingly smaller barrels inside the next barrel. The last barrel was very tiny. Each child was asked to take them apart and line them up according to size, from big to little. Then the child was to count them and group them by color. Next he was to put barrel halves of the same size inside each other in preparation for putting them back together. He was then to put them back inside each other.

4. LACING SHOE - Each child was given a large black lumber-jack boot which extends up the calf when worn. The child was instructed to unlace the boot and then lace it up again. The children really enjoyed this task.

5. PUZZLING PUZZLE - Each child was given a puzzle made up of thin, colorful rubber pieces. The pieces were of various geometric shapes. The child was allowed to look at the puzzle for two minutes and then was instructed to dump out the pieces and put it back together. Maps of the correct puzzle configurations (only two possible) were available if the child became confused. Five minutes were allowed for each configuration.

6. CLOTHES PIN DROP - Each child was given a quart jar and six clothes pins. They were instructed to stand up straight (no bending over) and drop six pins in a row into the bottle. Each child was allowed as many trials as possible until he could drop six in a row into the bottle.

Note: All tasks were sufficiently difficult or contained provisions for increased difficulty in order to provide ample interaction for the 10 minute observation. The children were always allowed to continue until completion, or until a reasonable amount of success was obtained.

Instructions to Parents

The following instructions were given to the parents each time an observation took place in their home. These instructions were given just after the explanation of the task and just prior to the beginning of the observation:

Your task is to help your child be successful in his/her task. You may help in any way except to do it for him/her. We will tell you when to begin.